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American MILK REVIEW

JANUARY, 1950

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A newspaper attack on the milk business produced a

NIGHTMARE IN RHODE ISLAND — PAGE 4

AN URNER BARRY PUBLICATION
XUM

At Fairlawn Dairy, Fairlawn, New Jersey

The operators like the way the De Laval Cold Milk Separator saves time at clean-up.

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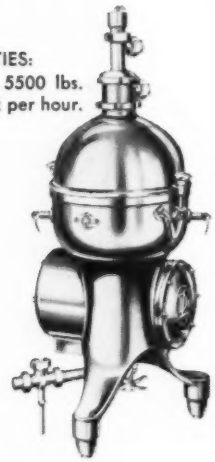

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XUM

Memo from the Editor

The word sour does not make me tingle. I do not like a "sour ball" or a "sour puss". If you are wise you use the term "tart" when you tell your wife that the rhubarb pie is sour. "Thou lookest as though thou had tasted sour beer", said Robin Hood to Little John. Children get stomach aches from eating sour apples. Green apples are sour. Run-down land is "sour". In fact, outside of certain concoctions to be found in the local pub, I can think of nothing that claims any merit by virtue of being sour.

Why then, good friends, must we continue to try to sell one of the best food sauces with which our pleasant world has been blessed, under the crushing handicap of "sour cream"?

N. M.

American
MILK REVIEW

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AMERICAN DAIRY PUBLICATION

Contents for January 1950 — *Vol. XII.* — *No. 1*

General Interest

Nightmare In Rhode Island 4
By Norman Myrick
Portrait of a Dairyman 16
Plain Talk From a Plains State 32
By John Burnham
It's a Fact 46
NDC Winter Conference 36

Management

Shall I Homogenize? 22
By R. F. Holland
Supplementing Frozen Cream 26
By H. V. Atherton and Alec Bradfield
Location Differentials 50
By A. A. Brown

Plant

Problems of the Industry 42
By R. F. Holland and J. C. White
Effective Pest Prevention 44
By E. M. Searls
Buildings and Budgets 48
By Fred Degenhardt

Sales

Courtesy Melts Sales Resistance 43
By Frank W. Gray
Let's Talk Accounting 52
By M. J. Kluger

Producers

Footnotes for Fieldmen 54
Clean, Cool and Covered 56
By C. B. A. Bryant

Associations

Illinois Convention 58
Meet the Secretary 59
Colorado Convention 60

Equipment

New Tank Cleaning Machine 62
Using Our Separator 64

Where to Buy It

Wants and For Sales 68
Index to Advertisers 70

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The Evening Bulletin
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DEL SESTO DECLARES STATE MILK CONTROL INADEQUATE; PLEDGES CORRECTIVE STEPS
PROMISES PEOPLE IMMEDIATE ACTION TO POLICE QUALITY
State Control Of Milk Urged
Milk Control Steps Vowed By DelSesto
Milk Official Wants R. I. Standard Better Than U. S. Bureau's
CONSUMERS' SPOKESMEN URGE NEW R.I. MILK CONTROL BOARD FOR REGULATION OF QUALITY
TWO SUGGEST PRICES ALSO BE DETERMINED BY SAME COMMISSION
State Promises To Protect Public On Milk Quality
NIGHTMARE IN RHODE ISLAND

By **NORMAN MYRICK**

ON THE MORNING of September 26, 1949 disaster that had threatened for eight days struck the W. C. Viall Dairy of East Providence, Rhode Island. As driver after driver returned from his route the impact of the catastrophe became bitterly clear, more than fifteen hundred quarts of business lost, twelve per cent of the daily volume, and the good name that had taken fifty years to build, sorely hurt.

Viall's was not alone. Mount Pleasant Dairy lost twenty-five per cent of its business that morning. Pippin Orchard Dairy suffered a similar fate. A. J. Christiansen saw 400 quarts out of a volume of 2400 vanish. H. C. Barber who had fashioned a 10,000 quart enterprise out of five hundred dollars and twenty-one years, found the work of half a life time drawn and quartered. Thirteen other dairies saw their volume drastically cut. Five companies experienced a sudden increase in their business. It was eight days that shook the State of Rhode Island. It began on September 18 which poetically was a mistake. It should have been December 7. It happened in this manner.

There is in Providence a newspaper known as the Providence Journal-Bulletin. It is a good newspaper. It has a superb plant. It has strong financial backing. It is a power in the city of Providence and the State of Rhode Island. It has no competition of any consequence. During the summer of 1949 this newspaper undertook to investigate the quality of milk sold in metropolitan Providence. To that end the paper engaged Richard E. Marland, Assistant Professor of Dairy Manufacturing at the University of Connecticut. On September 18 the Journal published the first of a series of eight stories based on the report Dick Marland made. Under a five column headline set in 36 point type the newspaper informed its readers "UNIVERSITY OF CONNECTICUT EXPERT FINDS SOME PROVIDENCE MILK UNFIT FOR HUMAN CONSUMPTION". That was the be-

ginning of one of the most amazing weeks in the history of the milk business.

Twenty-three dairies were involved in the study. On the basis of Marland's report five were described as putting out milk of satisfactory quality, nine were said to have milk of fair quality, and nine were classified as having milk of poor quality. The name of each dairy, along with the record of the tests that the investigator made, was published. Headlines such as "ONLY ONE DAIRY'S MILK REVEALS NO COLIFORM IN TEST", "SOME MILK SHOWS SOLIDS CONTENT BELOW STANDARD", "TESTS SHOW DIRT IN SOME SAMPLES" introduced each story. Each of the eight articles was a main feature on the front page relegating even the Russians to a second place.

CHRISTOPHER DEL SESTO
He conducted the hearings . . . .

LEONARD O. WARNER
He wrote the articles . . . .

The impact was terrific. Public health agencies were deluged with telephone calls. Family physicians, the newspaper, indeed almost any individual or organization connected with food or health was asked the same question by worried consumers, "Should we continue to drink milk?" For thousands of customers the question had been answered by the newspaper. They stopped buying milk. The Governor of the State found it necessary to take action to "restore public confidence in milk". The newspaper in a curious article that was tantamount to an admission they had created more of storm than they had bargained for advised the public not to get panicky and declared that there was no need for people to change dealers. But perhaps the most revealing statement of all was made by Dick Marland who at an executive session of the Rhode Island Milk Control Commission held on September 22, four days after the first article appeared, said, "I didn't anticipate such a surge".

Six Weeks of Investigation

The tests were conducted during June and July on 286 samples from 23 greater Providence dairies. The samples were purchased by Marland and his assistant David Lenth direct from the dairies or their trucks. The procedure was for the two young men to set out each morning in an automobile, make their purchases, cover the upper portion of the bottles with cellophane covers kept in the glove compartment of the car, place the samples in a box containing ice, and return to the laboratory located in the city.

Tests on the samples were run the day they were purchased with one or two exceptions. The exceptions were a few samples purchased on Sunday on which the tests were not run until the next day. In addition to listing the number of samples purchased, the date, time and location of the purchases, thirteen items for each sample were recorded in the report. The tests were ostensibly conducted according to "Standard Methods For The Examination of Dairy Products" as Published by the American Public Health Association.

Given a Free Hand

Mr. Marland and his assistant Mr. Lenth were given a completely free hand by the Journal-Bulletin in the conduct of the tests. The contract, which Marland signed, said among other things, "The company shall not interfere, nor attempt to interfere, nor shall any of its agents or servants interfere or attempt to interfere, with the detail of the conduct of the tests to be made under the supervision of Marland, but Marland shall be in all respects a free agent in the making of said tests and shall be at full liberty to arrive at his own conclusions with respect to the purity and quality of any samples obtained." The devastating part of the contract specified that the newspapers "shall list the names of all dairies, milk companies, dealers, distributors or retailers, as the case may be, whose pasteurized milk shall be found fit and up to standards. It shall also publish without fear or favor and without regard to the identity or connections thereof, the name of every dairy, milk company, dealer, distributor, or retailer as the case may be, the milk of which is found to be below recognized standard . . ." Thus into the hands of one man did the only newspaper in a city of two hundred and fifty thousand people place the fate of twenty-three dairy enterprises. When the Journal conceived the idea of run-

ning a survey on Providence milk they went to Rhode Island State College for help. The college dairy officials, wisely enough, turned the request down, but suggested that someone might be found at the University of Connecticut. At Connecticut the top hands in the dairy department were too busy to undertake the work but recommended Marland. Marland, when invited to make the survey, agreed to do so. He was given a free hand in the study with the understanding that his findings, good or bad, would be published "without fear or favor". The newspaper described Marland as an "expert" and as an "outstanding milk technologist". On the record he graduated from the University of Connecticut in 1942, where he majored in dairy manufacturing. He took a masters degree at Michigan State College in 1944 and then went into the Navy where he spent two years. On his discharge from military service he went to work for the H. P. Hood Company. In 1948 he joined the faculty at the University of Connecticut as Assistant Professor of Dairy Manufacturing. Dick Marland is a nice guy. His record is solid. He conducted his survey of Providence milk as nearly in accordance with prescribed methods as what was apparently a fairly routine study required. But he did not realize that a million bucks was looking over his shoulder as he made his tests.

Rumors by the Dozen

Why did the Providence Journal charge into the milk business with both barrels blazing? As the series of articles mounted in intensity, as the withering fire of the daily stories took their toll of dairy after dairy dealers tried to find the answer to that question. One day they were doing a healthy business, putting out a good product, making a little money, participating in the economic life of their community in a sound, happy fashion. The next day they were labelled as "arrogant", their product declared unfit for human consumption, and their integrity called into question.

There were many rumors. One story declared that the whole tragic episode could be traced back to the fact that an official of the newspaper who had a farm, had been prevented from selling milk in the city due to a new compulsory pasteurization ordinance. The attack on the milk industry was an oblique attack on the city's health officials who had prevented the gentleman's milk from reaching the market. Another version placed the blame on the shoulders of New England's largest milk company. This company's milk was given a satisfactory rating in general and was rated number one in flavor and aroma. The fact that the investigator worked for this company at one time and that the day the results of the study, giving them the palm for flavor, appeared in the newspaper there also appeared a large advertisement selling this company's milk on the basis of its fine flavor and aroma seemed beyond mere coincidence. A third story saw political implications; a Democratic administration being attacked by a Republican newspaper through the health departments with milk in the middle.

None of these stories contained the slightest truth. The newspaper official in question, has only two cows on his farm, does not and has not sold milk in the city. The Hood Company got wind that something was brewing two days before the first story broke and tried in vain to find out what the situation was. They did not know what the nature of the "expose" was until the papers hit the street. Their advertising campaign was their usual fall drive and the space had been contracted for weeks before the hurricane struck. The Democratic governor declared the survey of this ostensible Republican paper to be "a public service". It was not politically inspired. The project was loaded with too much dynamite to have such mean origins. The real reason should be a lesson to every dairyman in the United States. The real reason was price.

Price is a peculiar thing. It is possible through study and accounting to arrive at a logical figure for the price of milk or any other commodity. Market administrators, for example, do it every month. But the fact that the price is logical in an academic sense or even in an economic sense does not make it logical or acceptable to the public. One of the best demonstrations of this truth is the fact that people will pay four or five dollars for a quart of fire-water without a murmur yet will oil up their shooting irons when charged two bits for a quart of the best food in the world. People live by impressions, not by logic.

The Horse Was Gone

The price of milk in Providence was and is controlled by a State Milk Control Board. This board regulates producer and resale prices. It has done a creditable job in pricing milk during its existence. Providence dealers have operated on a lower gross margin than has been the national experience. Furthermore, the margin has increased to a lesser degree during the inflationary years than have the margins throughout the country. Yet, due to the high cost of producing milk for the Providence market, the retail price has been exceeded by only two other markets, New York and Jacksonville, Florida. The point is that although an exceedingly logical case can be made out for the price of Providence milk the public and the Providence Journal thought it was too high. The fundamental reason for the disaster which engulfed the Providence milk industry was a latent discontent over price. It does not matter that the price structure in the city was reasonable on the basis of economic facts. It does not matter that the spread was small. What does matter is that the people in the city thought *they were paying more than they should for milk.* On October 26 the Rhode Island Milk Dealers Association

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GIRTON MANUFACTURING COMPANY
• MILLVILLE, PA

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MODERN DAIRY EQUIPMENT OF ADVANCE DESIGN

presented an extremely able discussion of the economic side of the milk business in the State. But by that time the horse had been stolen. It is difficult for a dairyman to do all things and do them well. Buying and selling, processing and distributing make a man size job. Yet the terrible price that Providence milk dealers had to pay when they failed to solve the problem of price and the public is an ominous warning to every market in the United States.

During 1948 the Providence Journal had criticized the Rhode Island Milk Control Board. It was an indication of things to come. With the inexhorable logic of a Greek drama it became inevitable that sooner or later the question would be asked "What kind of milk are we getting for the price we pay?" It also was inevitable that if the dealers did not answer the question somebody else would. That is exactly what took place.

Health regulations in the Providence market are stringent. With the exception of a small per cent of certified milk, all milk sold for fluid consumption must be pasteurized. State and local health agencies have developed a system of farm and plant inspection, the equal of any in the country and better than that entertained by most municipalities. Routine checks are made at close intervals. More elaborate plant surveys are made two or three times each year. An inspector of dairies assisted by two samplers administers the program. In addition to this supervision the dealers have their own laboratories or subscribe to a laboratory service. If consumer acceptance of milk is of any merit in evaluating the success of this program then the program was an unqualified success. Providence citizens were drinking milk at the rate of a pint a day per capita. Plants were and are in good shape. Viall's dairy, for example, listed at the bottom of the totem pole, is a well maintained, well run plant. House keeping is excellent. Equipment is modern and good. The elan or esprit de corp of the people working in the plant is excellent. Cleaning techniques are sharp. There is a slick little lab with a full-time man in charge. The dairy is on its toes sales-wise, product-wise, promotion-wise. This is not a whitewash of Viall's, it is simply the result of personal observation. It is a smart plant. So is Barber's, so is East Greenwich, so is Monroe's, so are the rest.

If the plants were good plants following accepted procedures, if the health departments were satisfied with conditions prior to the survey one must logically ask was Marland's survey an accurate reflection of the picture? Were his results correct? That, unfortunately, is the great tragedy. No one will ever know. He made his tests, he recorded his data, he drew his conclusions but outside of his assistant Dave Lent not one single soul in all the world is in a position to check his work.

This failure to have any corroborative tests is the most serious of the many indictments that can be levelled at the Providence Journal. It was not only patently unfair to the milk dealers it also placed a responsibility on the shoulders of Dick Marland far beyond the compensation he received for his work. Obviously such a serious charge as the Journal made on the basis of Marland's study could not go unanswered. Equally obvious is the fact that the only reasonable answer that could be expected from the milk dealers was a denial of the validity of the tests. The dealers were joined in their denial by the Providence Health Department. The data that Marland compiled was examined and re-examined. His qualifications as a dairy scientist were minutely scrutenized. But the net result of the furor was to establish the fact that the tests could be neither proved nor disproved because there was nothing to check against. The results of the test were on the record and people either accepted them or did not accept them according to their knowledge and their sympathies.

The Providence Journal stands behind the tests to the limit. They can produce substantial witnesses

Number and Grade of Sample	Date and Time of Purchase	Location of Purchase	Microscopic Count (Bacteria per ml.)	Leucocyte Count Blood cells per ml.)	Standard Plate Count (Bacteria per ml.)	Coliform Count (Bacteria per 100 ml)	Thoroughness of Pasteurization	Flavor and Odor	Amount of Sediment	Specific Gravity	Total Milk Solids (%)	Milk Solids Not Fat (%)	Fat Content (%)	Water (%)	Types of Bacteria Present
#1 Grade A	June 28 7:45 a.m.	Rosewood av Cranston	620,000	200,000	58,000	230	Probably Underprocessed	Not objectionable	More than 10 specks	1.0304	12.76	8.46	4.3	Not done	---
#2Grade A	July 4 7:30 a.m.	Park Av. Cranston	2,040,000	600,000	16,000	1,700	Like raw milk	Fair	none	1.0307	12.71	8.515	4.2	---	Cocci, H.rods Pairs,chains
#3Grade A	July 5 8:10 a.m.	Dexter av. Prov.	130,000	90,000	L.A.	18,000+	Underprocessed	Not objectionable	none	1.0302	12.23	8.33	3.9	---	Rods, H.Rods
#4 GradeA	July 22 8:05 p.m.	Courtland St., Prov.	550,000	30,000	30,000	110	Grossly Underprocessed	Not objectionable	About 60 specks	1.0305	12.30	8.42	4.0	---	Rods,pairs Staphs.
#5 GradeA	July 26 8:05 p.m.	Garden st. Cranston	760,000	60,000	30,000	9,200	Grossly Underprocessed	Fair	9 specks	1.0306	12.69	8.49	4.2	---	Cocci,rods,rods chains
#1Grade B	June 25 8:30 a.m.	Narra.Blvd. Cranston	Estimate 2,200,000,000	Not done	34,000	9,200	Probably Underprocessed	Fair	Several Specks	1.0305	12.185	8.385	3.8	not done	H.rods, cocci, chains
#2Grade B	June 28 8:15 a.m.	Hoxie 4 Corners	50,000	130,000	25,000	45	OK	OK	none	1.0305	12.305	8.405	3.9	not done	Pairs rods
#3Grade B	July 1 10:45 a.m.	Amherst St.Prov.	320,000	240,000	5,900	790	OK	Not objectionable	none	1.0312	12.12	8.52	3.6	not done	Pairs,rods Staph.
#4Grade B	July 4 9:30 a.m.	Park av Cranston	2,800,000	1,060,000	185,000	1,700	OK	OK	2 specks	1.0306	11.24	8.39	3.7	---	Rods,H.rods chains
#5Grade B	July 5 8:10 a.m.	Dexter av. Prov.	520,000	360,000	L. A.	230	OK	OK	none	1.0311	12.73	8.68	4.05	---	---
#6Grade B	July 7 7:45 a.m.	Parade st. Prov.	850,000	10,000	13,000	none	OK	Poor	3 specks	1.0309	12.17	8.47	3.7	---	Chains,rods Cocci
#7Grade B	July 22 8:05 a.m.	Courtland St., Prov.	1,920,000	1,260,000	17,000	68	Underprocessed	Fair	1 mosquito 150 specks	1.0306	11.93	8.39	3.7	4.5	Pairs,chains Rods,Micro.
#8Grade B	July 26 8:05 p.m.	Garden st. Cranston	300,000	180,000	6,500	16,000	OK	Fair	25 specks	1.0302	12.44	8.31	3.8	---	Rods

Twenty-three charts, including this one, were published in the newspaper. A chart was prepared for each dairy and the name of the firm was published along with the chart. Terms used to describe thoroughness of pasteurization was one of the points on which tests were challenged.

IT 'babys' BOTTLES

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Cumberland Case cradles every bottle in a specially designed steel wire basket. The flexibility of this basket and the accurate spacing of its partition bars greatly reduce chances for bottle breakage or chipping.

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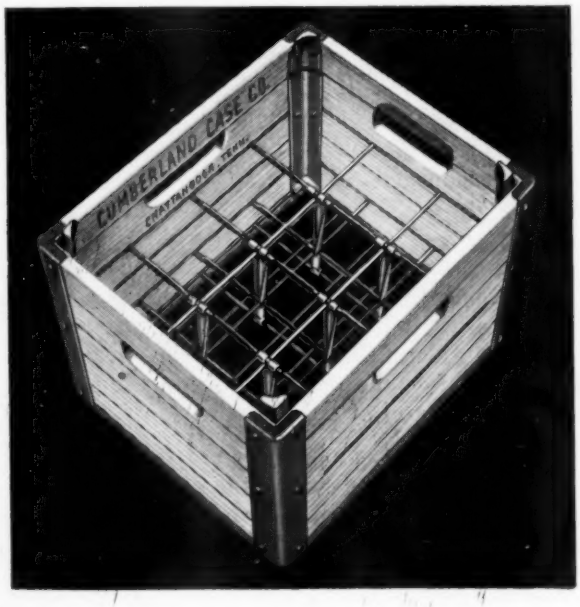
The use of both wire and wood in a Cumberland Case gives it a combined strength and resiliency which insures safest delivery of milk in glass bottles.



There is a Cumberland Case for every requirement. See your jobber or write us direct for descriptive literature.

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CHATTANOOGA, TENNESSEE

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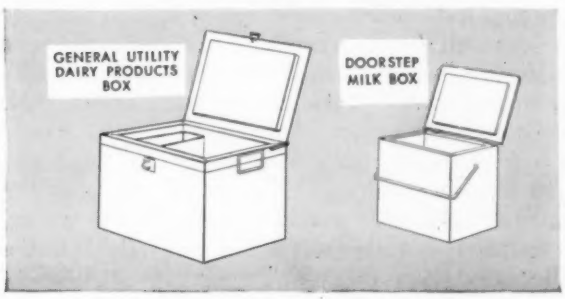


from the scientific world to vouch both for Marland and for the tests. On the other hand such prominent men as Dr. David Levowitz of the New Jersey Dairy Laboratories and Dean Samuel C. Prescott of the Massachusetts Institute of Technology raise serious questions of accuracy and technique that, if true, cut the ground out from under the survey. What it boils down to is one group saying "It is too", the other group saying "It is not" with neither group being able to present final and conclusive evidence in support of its position.

"You Takes Your Choice"

A. J. Christiansen summed up the situation when he said "I feel like a fellow accused of killing someone. I didn't but I can't prove it" The Providence Journal could well have paraphrased the Government's opening statement in the famous Hiss trial, "If you don't believe Marland we haven't got a case". One cannot help but feel, however, that a newspaper of the Journal's stature should have known far better than to crucify one of the city's finest assets on the basis of evidence that it could not corroborate.

Four days after the first story hit the streets the situation had developed to the point where the State government felt it necessary to take a hand. As a result of newspaper attacks on the Milk Control Board a year earlier, Governor Pastore had appointed a commission to study milk control laws and regulations. This commission, headed by Christopher Del Sesto, a former Rhode Island OPA administrator and Washington lawyer, moved from its original economic field into quality. On September 22 it met in executive session to hear testimony on the survey that the Journal had conducted. Seventeen persons were invited to attend the meeting including Dick Marland who had been subpoenaed.

The substance of the meeting was an attempt to establish the validity of Marland's work. He was questioned at length by Dean Samuel C. Prescott of the Massachusetts Institute of Technology, by Dr. Edwin M. Knights and Dr. Joseph Smith of the Providence Health Department, and by other individuals attending the meeting. After hearing testimony that, type written double spaced, occupys 122 pages Chairman Del Sesto observed, "Well, speaking for myself and not for the Committee, I find it very confusing to find that scientific men differ, and I think that with the proper tests under control, scientific men ought to come out with the same results. No one checked your (Marland's) work and nobody checks the City Health Department's work so that we can't tell whether the work is accurate or not. And the Committee would like a new survey made where you all check the results as you go along." The upshot was that the Committee came out publicly in favor of a new survey. The testimony however was not made available to the public.

THESE WERE THE HEADLINES

September 18 —
EXPERT FINDS SOME PROVIDENCE MILK UNFIT FOR HUMAN CONSUMPTION
September 19 —
ONLY ONE DAIRY'S MILK REVEALS NO COLIFORM IN TEST
September 20 —
MILK OF 9 DAIRIES GETS "FAIR" RATING IN QUALITY TESTS
September 21 —
SOME MILK SHOWS SOLIDS CONTENTS BELOW STANDARD
September 22 —
MILK SOLD BY 3 MORE DAIRIES TO MARLAND TYPED AS "FAIR" IN HIS SURVEY OF 23 DEALERS
September 23 —
TESTS SHOW DIRT IN SOME SAMPLES
September 24 —
EXCESSIVE SEDIMENT IS FOUND IN ALL 13 SAMPLES SOLD BY DAIRY IN NORTH PROVIDENCE
September 25 —
COLIFORM IN GREAT QUANTITIES FOUND IN MILK OF 2 FIRMS

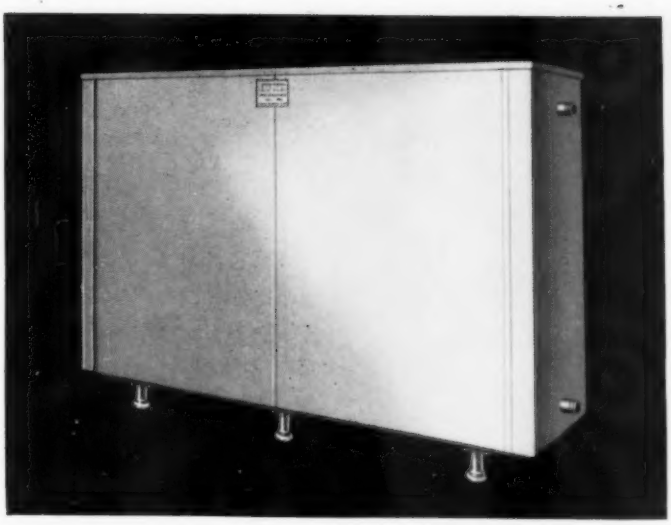
These headlines were on the front page as main features. They were usually five columns wide, set in heavy type.

Five days after the executive session, the DelSesto Committee held a public hearing. Six hours of testimony was heard. According to the Journal the Committee adjourned "with the expressed intention of taking some action immediately to restore public confidence in milk".

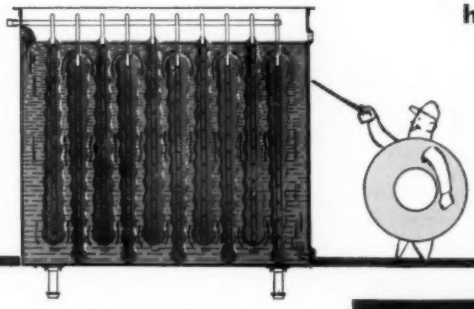
At this particular hearing records of the nine "poor" dealers were presented. In each case the records showed that the milk had been up to legal requirements. Each of the nine dealers testified in addition to presenting the records. The Marland report was subjected to a vigorous attack by Dr. David Levowitz of the New Jersey Dairy Laboratories. Levowitz' conclusion was "I respectfully submit that the Marland data and conclusions are not creditable . . . I personally regret the Marland survey", he added. "I can see that it has served no other purpose than needlessly to alarm the residents of this area and all those involved in the production, processing, distribution, and control of dairy products."

Dr. Mason H. Campbell, dean of the agricultural school at Rhode Island State College was more cautious in his criticism of the survey. The substance of his testimony was that no emergency existed and that there was nothing to be alarmed about. He declared

Here's why progressive plants are turning to sweet water for cooling milk and other products with the Icy-Flo Sweet Water Cooler. It offers an advanced type system that takes advantage of the tremendous cooling ability of melting ice which is stored up by a very small ice machine during periods of "off peak" loads. Designed primarily to make possible economical refrigeration in the smaller plant or creamery, Icy-Flo costs less to buy, requires only the smallest ice machine—and costs less to operate. It prevents freezing of products and flavor contamination—assures uniform cream layer and a better tasting product.



you save when you "store" refrigeration with icy-flo

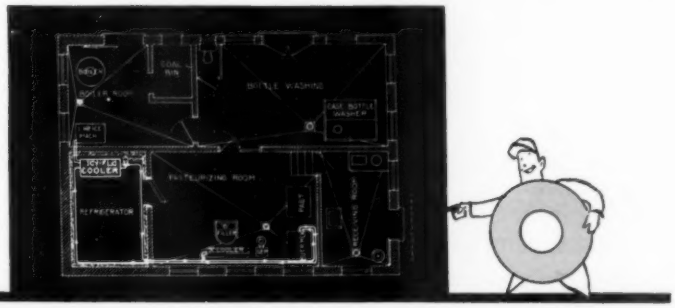


how icy-flo works to cut your costs

During the part of the day when no product cooling is going on, long ice banks are frozen on to vertical fin-type coils. This refrigeration stored up during low-cost, "low peak load" periods is available when you are ready to cool your product. Cooling water travels up and down through a long, narrow, winding path to become chilled at a low temperature. There is no corrosion of equipment, no danger of product absorbing odors in case of leakage.

costs less to install, too!

Icy-Flo is a self-contained unit for floor mounting, requiring a minimum of floor space and height. It is small and compact—one-seventh the size of the same capacity brine tank. With freon 12 or methyl-chloride, the self-contained compressor requires no heavy machine foundations. Storage capacities up to 720,000 b.t.u.



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send for details!

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DR. ARTHUR FAY
H. P. Hood & Sons

ELLIOT REMINGTON
Remington's Dairy

These three men are the dealer representatives on the 12 man board that will govern the Rhode Island Milk Foundation. Although there had been preliminary hearings on the formation of the Foundation dealers did not know of its formation until they read about it in the newspaper.

WILLIAM ARMSTRONG
A. B. Monroe Dairy

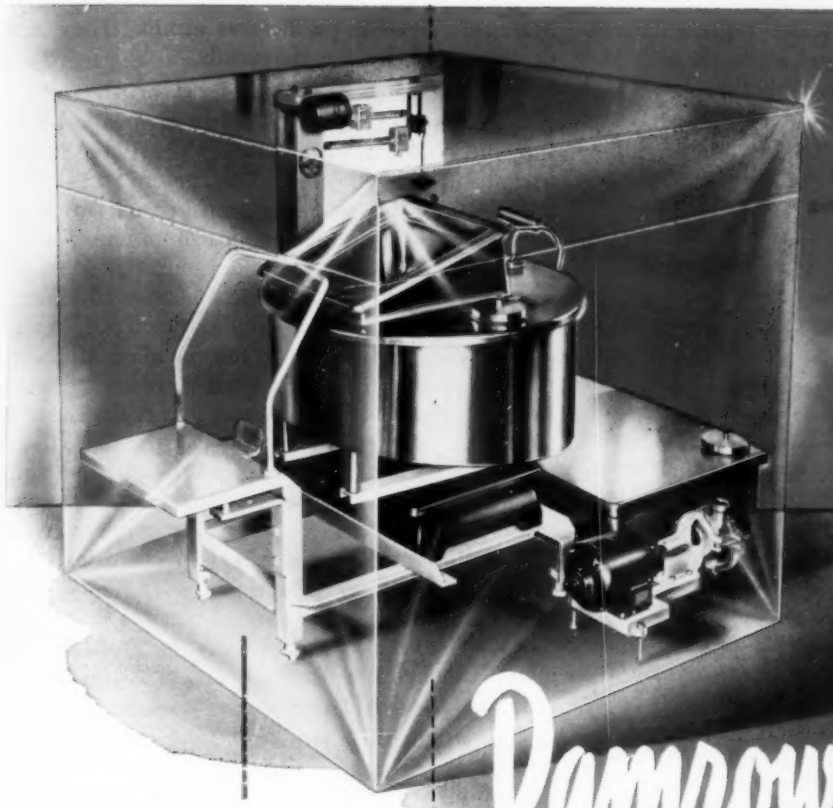
that a quality control program would be a good thing and that he believed a satisfactory program of that nature could be worked out.

The Providence Journal Published a long report of the hearing. The general impression that one gets from reading the testimony is that maybe Marland was right and maybe he wasn't, but, assuming that the work was accurate, what it showed should not be the cause of alarm. Dealers' records showed that they had been producing milk of proper quality under the law. The Health Department of the city was given a vote of confidence and the Committee went on record as being against sin and for quality control. To this the dealers agreed, they also were against sin. That made it unanimous because it was pretty obvious that the Journal was against sin too.

But it is one thing to be against sin and it is another thing to have quality control shoved down your throat without too much of an opportunity to consider the issue in a reasonable light. That is what proceded to happen.

It must be remembered that the Journal undertook this survey as "a public service". If that were true then the newspaper could not very well stop once the stories were published and let it go at that. The thing had kicked up too much dust. In order to substantiate its position the Journal had to be for something. It came out for quality control in general and the Minneapolis-St. Paul brand of quality control in particular. Just what the Minneapolis-St. Paul Plan was nobody in the State of Rhode Island, outside of Providence Journal office, seemed to know. Suddenly everybody was for quality control. The Governor was for quality control and the indefatigable Mr. Del Sesto proceeded to carry the q.c. ball. The A.F.of L. came out for quality control. The various consumer organizations raised the quality banner. And the milk dealers, forced inexhorably into the position of answering yes or no to the question "Have you stopped beating your wife?", came out for quality control too. On November 13 formation of the Rhode Island Milk Foundation was announced.

The Rhode Island Milk Foundation is described as a "co-operative, non-profit laboratory, to insure the sale of only the highest quality of milk in the State". It is to be financed by a levy of a half cent a hundredweight of milk on both the dealers and producers. A 12 man commission composed of representatives from the public, the dealers, the producers, and the public health services will run the Foundation. The announcement was made on November 13, on December 7 more than three weeks later DEALERS STILL DID NOT KNOW THE NATURE OR THE SCOPE OF OPERATION OF THIS NEW PROGRAM TO WHICH THEY HAD BEEN COMMITTED. Whether it was to be compulsory or voluntary was not known. Whether the laboratory reports would be public or confidential was not known. How much the program would cost was not known. Who was to direct the laboratory was not known. What the director's salary would be was not known. As a matter of fact, at least one of the dealer representatives to the Foundation and all of the dealers except one did not even know that a Foundation had been formed until the story appeared in the Journal on November 13. On Saturday, November 12, Chairman Del Sesto called Elliot Remington, President of the Rhode Island Milk Dealers Association on the telephone and informed him that the Foundation was going to be formed and would he, Remington, name three dealers to serve as representatives of the dealer group. Remington named himself, Dr. Arthur C. Fay of H. P. Hood and Sons, and Robert E. Armstrong of



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Engineered for simple installation, high efficiency and accuracy at low cost, Damrow Junior Weighing-Receiving Units are available in many standard arrangements to suit your needs. They are available with weigh tank, receiving tank, can dump, scale, pump, complete sample attachment if desired, all piping and connections. Save time and money on your weigh-ins . . . Write for Damrow Junior Bulletin WC-1048.

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the A. B. Monroe Dairy as dealer representatives. Mr. Remington was unable to get in touch with Mr. Monroe before the story broke. Whether he got in touch with Dr. Fay this writer does not know. The point is that Mr. Remington was notified at the last minute that the Foundation was to be formed and that of the men he named to the Foundation *at least one did not know of his appointment until he read about it in the morning paper.*

It is eleven years since the great hurricane of 1938 blew the waters of Narragansett Bay into the Biltmore Hotel. The city recovered from that blow and it presumably will someday recover from the storm created by the milk stories. It is an open question, however, which catastrophe will have left the deepest scars. The one damaged property and took some lives. The other has eaten into the very fibre that holds a society together. The relationship of dealer with dealer, of dealer with customer, of newspaper with the community, of government with industry and government with the public, these are the foundations of human relationships. These are the things that were exposed to the virus of suspicion and fear and jealousy generated by the Journal's action.

It Was Not Very Pleasant

There were dealers rated high in the tests, who used the newspaper stories as a basis for soliciting new business. In some cases, even though they enjoyed a spot in the top group, companies repudiated the tests and instructed their drivers not to use the newspaper. But it is a difficult thing to prevent men whose income increases with their sales not to use what certainly must have appeared like a golden opportunity to build up the route. It was dirty pool but it happened.

Fear is basic and it is dangerous. In Providence the citizenry awoke one morning to learn that some of the milk they took for granted was unfit for human consumption. Milk, believed in, respected, enjoyed, was suddenly revealed as something swarming with bacteria, loaded with unholy horrors called leucocytes, delivered in unclean bottles, adulterated with water, and contaminated with specks, tobacco, and one mosquito. "COLIFORM IN GREAT QUANTITIES FOUND IN MILK OF TWO FIRMS" the headlines said, invariably defining coliform as "bacteria found in the intestinal tract". "ONLY ONE DAIRY'S MILK REVEALS NO COLIFORM IN TEST", the newspaper declared. And so one woman berated her milkman with the immortal words, "Now I know why my baby goes to sleep after drinking her milk, you've been putting chloroform in the stuff." Could the public be other than afraid? The newspaper said the milk was unfit for human consumption, said so in potent headlines and column after column of type. It was in print, in black and white. "There is no need for panic", said the Journal. "Restore public confidence in milk", said the Governor. "I didn't anticipate such a surge", said Marland. But the public was afraid. They stopped drinking milk by the thousands.

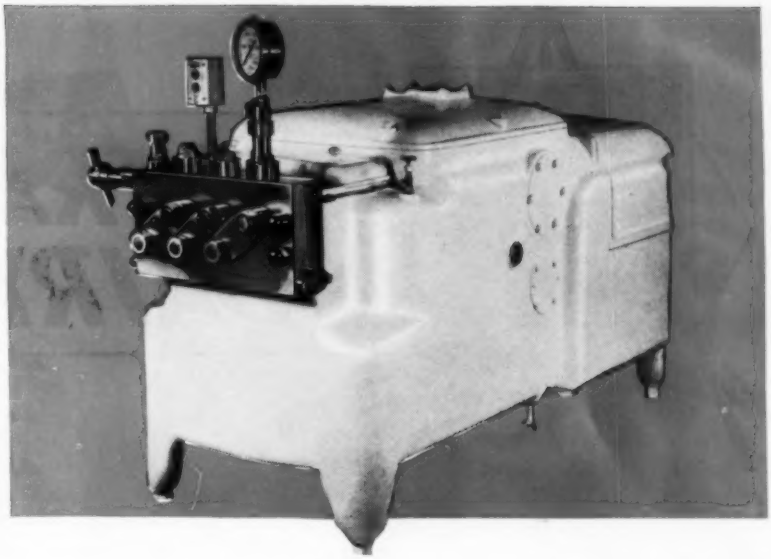
Hang Them — Hang Them All

Dealers were afraid. This was a new problem that they did not know how to fight. They were suspicious and afraid of each other. The rumors and the tactics and the accusations had gotten in their work. Some of them were reluctant to appear in public. They made statements that were quoted and misquoted until they were afraid to speak. They were named to committees that took action without their knowledge. They learned that they had approved the so-called Minneapolis-St. Paul plan for quality control by reading about it in the newspaper. Their business was badly hurt. They had been branded publicly as pariahs. Their reputations had been sullied. They had found that some of their colleagues had placed private gain above the common good at the most crucial time in their business lives. Without warning they had been dealt a blow such as few business communities have ever suffered. Without trial an accusation had become accepted fact, so much so, that the Governor of the State said in effect, Clean up or shut up. This was the fruit of "a great public service".

It is difficult to label this affair other than tragic. Not so much because the quality of a splendid food was brought into question but because the very essence of human relationship was unwittingly sabotaged. I have been to Providence. I have talked with dealers and health officials. I have talked with the reporter who wrote the articles and with Dick Marland who made the tests. I am convinced that study was undertaken by the newspaper in an honest effort to find out "what kind of milk we are getting for the price we pay". I am convinced that Dick Marland made his tests as thoroughly as his training, experience, and competence would allow. But I am also convinced that the milk the people of Providence were buying was a good product. As a generality Marland agrees with this. The milk plants in Providence are first class establishments. The health department in the city is made up of men whose abilities and achievements are equal to those of any health officers in the country. The standards for milk are high and are enforced with wisdom and vigor. Nor must it be forgotten that in spite of high prices, per capita consumption of milk in Providence was at an extremely high level. I am convinced that the accumulated evidence of dealer integrity, health department supervision, and consumer acceptance all demonstrated over a period of years, give a more accurate picture of the quality of Rhode Island milk than do the exaggerated stories built around one set of tests conducted during part of two summer months. The great tragedy is that men of goodwill, should have been brought so close to disaster by an act, well intended though it may have been, that was as ill advised as it was unnecessary.

XUM

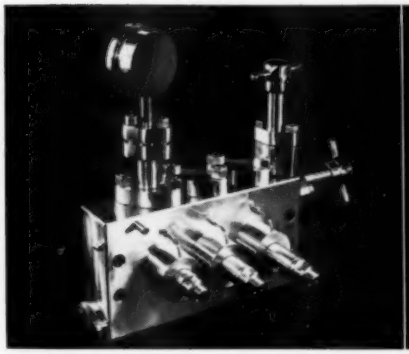
Is Your Homogenizer the "Bottleneck" in saving milk, man-hours and money?



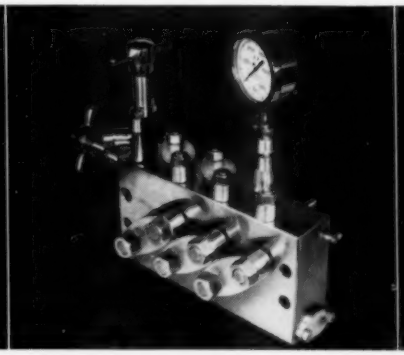
The homogenizer frequently sets the pace for the whole production schedule. If it delivers 400 gallons per hour when 600 are needed to keep pasteurizer, filler and washer operating steadily, then you are likely to have frequent and expensive shutdowns, loss of production and maybe overtime is required.

On the other hand, your homogenizer may take too long to clean, is of insanitary construction or just not doing the job.

If the homogenizer is your bottleneck, have your Cherry-Burrell representative tell you about the new SUPERHOMO — the industry's most advanced homogenizer. It has many exclusive, patented features. Here are only three of them. There are many more.



NEW CYLINDER BLOCK . . . is solid stainless steel for greater strength and sanitation. Easily cleaned, all parts are removed from front of block. Saves cleaning time.



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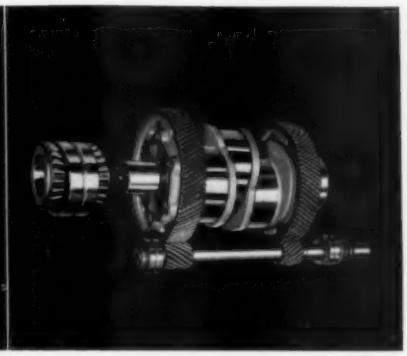

NEW TWIN HELICAL GEARS . . . are extra wide and heavy for safety, longer life, and smoother operation. Timken roller bearings reduce friction. Lubrication is positive.

The Superhomo is made in sizes to fit all capacity needs from 50 to 2,500 gal. per hour (400 to 20,000 lbs. per hour). Find out today how you can homogenize — profitably! *Send for Superhomo Bulletin.*

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PORTRAIT OF A DAIRYMAN

MINNESOTA means many things. It means wheat and iron, cattle and corn. It means the vast expanse of the northern plains and the bitter cold weather of winters along the 49th parallel. It means the fabulous expanse of mighty Lake Superior and the magnificent wilderness of the Lake of the Woods. But most of all, Minnesota, like her forty-seven sisters, means people.

Bill Riedel is a Minnesotan and a dairyman. His claim to each title is solidly established through a life time of work in both departments. Born and raised on a dairy farm not far from Minneapolis he has been engaged in producing and distributing top quality milk since he was old enough to twist a calf's tail. In his climb up the dairy industry ladder he has hit all of the rungs from barn to front office.

Mr. Riedel is Secretary-Treasurer of Sanitary Farm Dairies, of St. Paul. The firm was incorporated in St. Paul in 1915. Its story is the splendid story of so many other American dairy firms. A modest beginning nourished with hard work and progressive managerial guidance has evolved into a well balanced healthy enterprise as the century reaches the half way mark. The firm has connections with plants in Cedar Rapids and Clinton, Iowa, as well as with plants in Houston and Bryan, Texas. These plants all operate under the same name. For thirty-five years Bill Riedel has been connected with Sanitary Farm Dairies. It is not an idle statement to say that this sound business operating in three states owes much of its substantial character to William C. Riedel.

As one might expect Mr. Riedel has seen the broad sweep of the dairy industry. He has given generously of his time, his energy, and his ability to further the industry through trade association work at local, state, and national levels. His firm joined the predecessor of Milk Industry Foundation in 1916 and Mr. Riedel has been actively concerned with the work of that organization ever since. When the Foundation held its annual convention at Atlantic City in 1946 it elected him to the Board of Directors. At the present time he is a member of the Foundation's Executive Committee.

Bill Riedel's story is a proud one. It is what people mean when they talk about free enterprise and rugged individualism in the best sense of the term. It is a story that the nation should find well worth the effort that will be involved to preserve it.

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No balancing weights are used in Sharples Clarifier and Separator bowls.

By grinding this special shoulder lasting balance is obtained externally . . . adding years to the trouble-free service life. Without weights, there is nothing to come loose or to hamper easy, thorough cleaning.

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dairy division

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Announcing another service

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ERICKSON ALUMINUM MILK CASE

Made of Reynolds *Lifetime* Aluminum, this scientifically constructed Milk Case has achieved an amazing record of cost reduction at some of the country's largest and best operated dairies. The manufacturers, C. E. Erickson of Des Moines, Iowa, with a background of forty years in metal working, will continue to make the Erickson Aluminum Milk Case. Reynolds, who gave the dairy industry the Aluminum Butter Wrap and Reynolds Pak, will act as exclusive sales agents. Orders should be addressed to **Reynolds Metals Company,** Foil Division, Richmond 19, Virginia.

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1. **LIGHT WEIGHT...CUTS DELIVERY COSTS.** The Erickson Aluminum Milk Case weighs only 6 lbs. A dairy using 1000 of these cases will haul 1,560,000 pounds less weight in a year's time.

2. **BOTTLE BREAKAGE PRACTICALLY ELIMINATED.** Slide tests show that conventional cases break from 64 to 75 times more bottles than the Erickson Aluminum Milk Case. With normal handling, breakage should be reduced to zero.

3. **CUTS REFRIGERATION COSTS.** Because of the high conductivity of aluminum the Erickson case drastically cuts refrigeration time...one dairy reports a 50% reduction.

4. **LASTS LONGER.** Plants which have used the Erickson cases for more than two years estimate they will still be good after eight or ten years service.

5. **EASY TO HANDLE.** Easy stacking and light weight are a boon to plant workers who handle several hundred cases a day.

6. **MORE SANITARY.** Scalding makes the Erickson Aluminum Milk Case perfectly sanitary without the slightest damage to the case itself. Drains and dries quickly.

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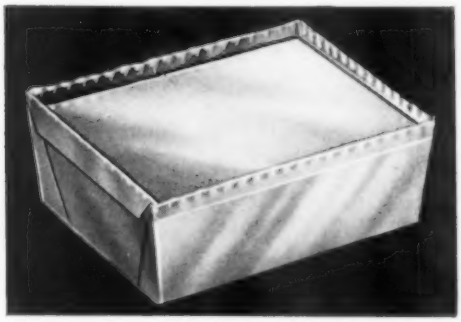
to the Dairy Industry...

Tests Prove Less Breakage

Photo shows the 8-foot slide used in making breakage tests at more than 100 dairies throughout the country. During all these tests the Erickson Aluminum Milk Case was dropped 4399 times and broke 106 bottles. The conventional case was dropped only 1084 times and broke 1726 bottles. In other words, the Erickson case cut breakage from 132 to 2 per 1000 bottles... a reduction of 98.48%. This can mean a great saving in broken bottles and lost milk. Detailed test reports available on request.



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The ideal container for dairy products. Pre-formed of pure aluminum... semi-rigid... shipped nested with lids separate. Easy to fill, easy to close the crimp-on lids... needs no liner or wrapper.

Reynolds Aluminum Butter Wrap

The butter wrap that has proved its superiority in preserving score and weight, preventing odor contamination, maintaining churn-fresh quality. Reynolds Aluminum makes available to dairy products the protection they must have, the eye-appeal they should have, and the merchandising value that makes sales.

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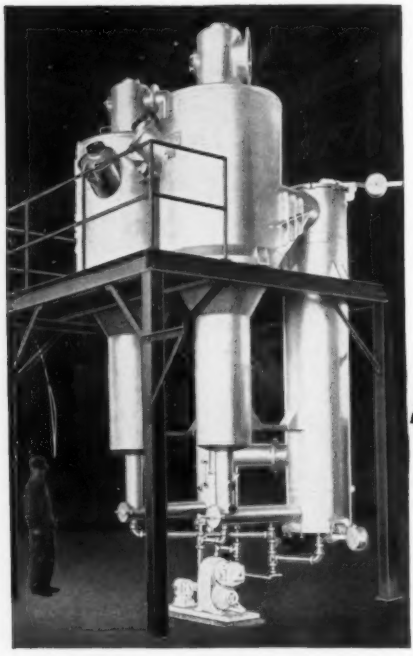
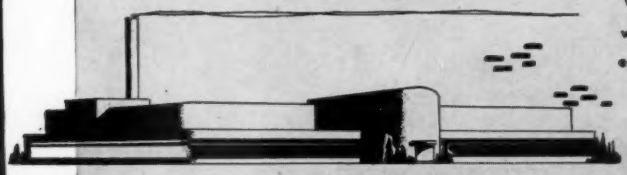
Write for Bulletins Nos. 343 and 344.



Buflovak's profit-making performance is now available to every manufacturer of concentrated milk . . . regardless of plant size. Buflovak Evaporators come in a wide range of sizes and styles from the small single effect model for batch or continuous operation to the huge triple effect models.

In the Buflovak, natural flavor, uniform texture and appealing color are the sales winning results of rapid concentration with a short exposure to heating surfaces. The Buflovak Double Effect Evaporater affords a 50% saving in steam and cooling water, while the Triple Effect Evaporator* realizes a 67% saving in steam and 80% conservation of cooling water in comparison to single effect operation. All Buflovak Evaporators recover more than 99.9% of solids.



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The ever growing dry milk market is just one more sound reason for expanding the Buflovak way. Buflovak Milk Dryers dry skimmilk, whole milk and sweet and sour buttermilk with equal success. Your profits are increased through top product quality, low production costs and large capacity.

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EDITORIALLY SPEAKING . .

THE PROVIDENCE AFFAIR

THE most significant statement in the bitter Rhode Island milk controversy was made by Christopher DelSesto, chairman of the Governor's special milk study commission. At an executive meeting of the commission on September 22 the charge that milk "unfit for human consumption" was being sold in the city of Providence was subjected to analysis by recognized authorities in bacteriology and dairy science. After hearing detailed discussion of the question the chairman observed ". . . I find it very confusing to find that scientific men differ, and I think that with the proper tests under control, scientific men ought to come out with the same results. *No one checked your work (Marland's) and no one checks the City Health Department's work so we can't tell whether the work is accurate or not. . . .*"

The power of a newspaper to mold public opinion is very close to the power to exalt or to destroy. When, as in the case of the Providence Journal, the newspaper has a monopoly that power is greatly enhanced. It is a power that must be exercised with wisdom and justice.

MR. DEL SESTO is a lawyer. He has been trained to look at evidence and arrive at a conclusion based on that evidence. Yet when the charges of the newspaper were examined in his presence he found them to be open to question. His committee subsequently expressed complete confidence in the Providence Health Department. The newspaper said editorially that there was "no need for panic."

The charges that the Providence Journal made were extremely serious charges. They ranged all the way from adulterated milk to improper pasteurization. If these charges were true then the people of Providence were not only being gyped they were being exposed to dangerous bacteria. These are accusations calculated to make a milk dealer tremble. They are equivalent to fraud and assault with a dangerous weapon. Such charges should not be lightly made. There should be no question when such charges are made. In Providence there was a question, a substantial question. The foundation of American liberty is the concept that a man is innocent until proved guilty. Yet without a semblance of fair play, without benefit of a trial, on the basis of evidence that proved to be inconclusive, an accusation was made, the accused was found to be guilty, sentence was passed and executed. This is a far cry from the wisdom one expects of a great newspaper.

●

A HARD BOUGHT THING

WE SAW some figures on government storage holdings as a result of price support programs. Butter, dry milk, and cheese bulk large among the commodities held. A few days ago the new price support for milk was announced. At this writing the air is full of talk of a last ditch fight against the repeal of the regulations on oleo. Protective tariffs on dairy products are jealously guarded by dairy and farm organizations. In some thirty odd markets the price of milk is announced each month by a federal market administrator. In many states the retail price is set by a State control board. What we want to know is do we believe in this free enterprise about which we talk or don't we.

Maybe all of these controls and regulations, all of these protective devices and legislative crutches are necessary. Maybe a highly industrialized society needs them. We would hesitate to be dogmatic about it. But we hate to see the political lobby substituted for the door bell. We dislike the idea of free men bowing to the mandarins of legislated security. We have not forgotten that another generation of Americans saw fit to back their right to determine their own destinies with their lives, their fortunes, and their sacred honor.

We do not believe that price supports, oleo legislation, market regulation, or tariff protection provide a particularly healthy environment. If all of this fine talk we've been hearing at conventions means anything we can apply it in our own back yard. Freedom is a hard bought thing. You've got to work at it.

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NEW AMERICAN MILK REVIEW

JANUARY 1950 means many things to many people. To us it means the coming out of the new "American Milk Review." Like all things into which one has put time and energy and good honest sweat we are a bit proud of our creation. Forgive us, then, if we point out some of the new touches.

The cover was designed by artist Frank Lischke of New York with assistance from Larry Greenspon, Wilkes-Barre. The cover picture was done by Mr. Lischke and we look forward to other covers from his brush during the course of the year. The new contents page with its departmentalized listing of the inards of the book is also the work of Mr. Lischke.

But covers and layouts and type are all really frosting, the real body of the cake is the reading matter inside the covers. Here we've endeavored to give you the best that the industry has to offer. There are three new departments. We are tickled pink to welcome Fred Degenhardt, architect and specialist in dairy plant construction to the "American Milk Review" family with his column Buildings and Budgets. In addition, from the typewriters of our staff come the two other new columns, Presenting the Ladies, and Meet the Secretary. "Doc" Holland and Jim White will continue their valuable discussions on problems of the industry and Jim Kluger already has his copy in for the next edition of his "Let's Talk Accounting." We've dressed up the feature "Portrait of a Dairyman" and anticipate the task of making you better acquainted with some of your colleagues in the milk business.

The feature articles published this month are an indication of things to come. We are bending every effort to bring you the latest thinking of industry leaders on the myriad problems that the milk business faces.

Next month we are going to tackle that knotty problem of co-operative tax exemption. Paul Potter, noted labor relations authority will begin a series of articles on labor. A story on the volcanic anti-trust trial in Chicago, an account of the dairy business in the new state of Israel plus other valuable articles are on the docket.

It is a little on the trite side to say that we hope you find our efforts of real value. But that's the way we feel. As a matter of fact there is nothing that would please us more than to have you drop us a line. We would welcome your criticisms and your suggestions. Our editorial hide is tough, so don't feel that you have to spare the horses. We look forward to hearing from you.

Shall I Homogenize?

By **ROBERT F. HOLLAND**

HOMOGENIZATION of milk for delivery to the household trade came into common practice in the few years just prior to World War II. Its rapid introduction was due largely to two factors. First, competition. Milk consumption had dropped off drastically during the depression years of the early thirties and distributors were looking for measures which would expand sales at the expense of their competitors. Homogenization was one answer and fortification of the vitamin D content of the milk helped markedly in bringing about consumer acceptance of the product. America is vitamin conscious to the tune of many millions of dollars annually.

The second factor in the rapid expansion of homogenized milk sales was that of profits and was, of course, directly tied to the first. The homogenized product could be sold for 1-2 cents per quart above normal milk, depending upon whether or not vitamin D was added. The actual cost to the dealer of processing and fortifying was considerably below this if a reasonable sales volume was attained and thus the profit per quart was increased.

Under normal conditions the possessor of a unique process does not long enjoy his monopoly. His competitors feel forced to go along and soon all are on the same competitive basis as before. Conditions at the end of the 30's and the first five years of the 40's were far from normal, however. Production of civilian equipment was cut to a dribble in the armament race. In many communities the possessors of homogenizers were in the unique position of having a protected monopoly. Full advantage of this was taken and, in general, the price differential of 1-2 cents per quart was maintained.

The end of the war and resumption of production of civilian goods, however, ended this situation. Dealers who had been forced to buy homogenized milk from competitors or see their sales fall off rushed to buy homogenizers. Equipment manufacturers were not slow to take full advantage of this situation in sales promotion and it was not unusual for manufacturers to take orders for delivery three years in the future. To add to the interest, one does not produce homogenized milk for the household trade by simply installing a homogenizer and putting his milk through it. Homogenized milk must be pasteurized and clarified. Thus it was often possible to sell a pasteurizer and a clarifier as well as the homogenizer to the harassed dealer.

But for How Long?

Within two years after the end of the war, machinery deliveries had pretty well caught up with sales and the milk industry had settled down to straight competition based on price and service. But don't forget that additional margin in the price of homogenized milk. The effects of this are now being widely felt. A few dealers cut the price of plain homogenized milk to that of regular milk. This forced their competitors to cut the price likewise and now in many markets it is possible for the consumer to purchase either type of milk at the same price. The vitamin-fortified product still generally commands a 1-cent premium but — for how long?

Now let us see where this discussion takes us. What benefits are derived from homogenization for the consumer and for the dealer? What are its disadvantages?

The passage of milk under high pressure through the homogenizing valve produces two major results. First, the fat globules are split into smaller fat particles, greatly increasing the total fat surface per quart. Second, the milk proteins become unstable, rendering them more easily coagulated by heat or chemicals. This latter effect probably also accounts for the fact that the fat globules will no longer clump and creaming will not occur. This factor is advantageous in several instances. In hotels, restaurants, and institutions it prevents diversion of rich top-milk to other uses, leaving a low-test product for the milk drinker. It also obviates the necessity of mixing bulk milk and the possibility of contamination by unclean stirring equipment. School children benefit from homogenized milk where served in the school cafeteria. It prevents the possibility of inserting a straw to the bottom of unhomogenized milk, consuming the skim and leaving the cream either because they have had enough or because they do not like the bland flavor of the high-fat material.

Nutritionally, homogenized milk has no advantage over normal milk except possibly in the case of infants and invalids. A softer curd is produced in the stomach, perhaps making it more easily

Exclusive feature AMR

THERE'S A BRIGHT NEW STAR IN THE MILKY WAY

Listen to what the Dairymen are saying.

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THE KNOX LINE OF MILK BOTTLES MEANS SUBSTANTIAL CASH SAVINGS TO OUR DAIRY ★

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ANOTHER DELIVERY FROM KNOX—THE BOTTLES WE WANT— WHEN WE WANT THEM.

QUALITY

An entirely new fabricating method—exclusive with KNOX—imparts additional toughness to the bottle. Thermal shock and impact resistance are high—capseats consistently good.

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One entire factory of the KNOX group is dedicated to the exclusive production of milk bottles—ample decorating facilities insure you prompt service. Delivery by truck or rail as you prefer.

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digested. No benefits from this have ever been proven for the ordinary consumer.

It is often claimed that homogenized milk has a richer, smoother, and, in general, a better flavor than normal milk. This is sometimes true but is not a necessary corollary to homogenization. In a study of milk flavors made over a period of several years in the product turned out by 60 milk plants in New York State in no case did a homogenized sample receive a top score. Judging was done by competent judges who had no knowledge of the treatment that had been given to the product being tasted.

Now let us examine a few of the problems connected with homogenization. Equipment cost is a large factor, particularly for the small dealer. As previously stated, homogenized milk must also be clarified milk. Therefore, both pieces of equipment must be provided involving an expenditure of 4-5 thousand dollars in even the smaller sizes.

Break Even Point

Other costs are involved as well, such as power, gaskets, oil, repair and maintenance, depreciation, cleaning materials, and labor. A rock-bottom direct labor and overhead cost to the small operator would be in the vicinity of $2.00 per day on the homogenizer alone. Considering margins at ¼ cent per quart, the break-even volume would be 800 quarts of *additional* business per day to justify homogenization if no premium is charged for this product. If the price per quart is increased on the homogenized product, this picture is, of course, changed. Cold cost calculation cannot always be the deciding factor in a dealer's decision as to whether or not to homogenize since competition may force him to go along to keep his trade.

Control of sediment is another important problem in homogenized milk production. This is the reason for the clarifier. Sediment in milk consists of two classes of material, extraneous dirt and the leucocytes or white cells normally shed into the milk from the interior of the udder. Clarification, hot or cold, will generally remove the first class of material completely enough so that it will not be visible to the consumer. This is not always true in the case of leucocytes, however, and disagreeable-appearing gray films or specks may appear in the bottoms of bottles of homogenized milk. The percentage of leucocytes removed by the clarifier is extremely variable but averages between 40 and 50 per cent. Since the leucocyte count becomes very high in milk from diseased or injured udders it can readily be seen that even clarification may not be adequate to eliminate trouble from this source. Also low homogenizing pressures and worn homogenizing valves seem to lead to difficulty from leucocyte sedimentation. Unhomogenized milk does not ordinarily give trouble of this type because sediment tends to be swept up into the cream layer by the rising fat and does not appear in the bottom of the bottle.

It Has Its Problems

The creamier, richer, and, in general, superior flavor claimed for homogenized milk does not necessarily hold true. The production of a good product requires greater care in selection and processing than is the case with unhomogenized milk. The homogenized product is also more susceptible to certain off-flavors than the milk from which it was made. It develops a "sunshine" flavor very readily when exposed to sunlight on the doorstep or elsewhere for any considerable period of time. Route drivers must be instructed to place homogenized milk in cabinets or other places where it will be protected from light. A flat or chalky flavor is also commonly experienced and may be very troublesome. Homogenized milk must always be pasteurized to destroy the enzyme lipase, preventing the development of rancid flavors. In general, it may be stated that competent judges have found no flavor superiority of homogenized over regular milk and the former product is subject to more rapid flavor deterioration in some respects than is regular milk.

High bacterial counts on homogenized milk are not uncommon. The homogenizer is a complicated piece of equipment and is hard to wash and sterilize properly. This is especially true of the gaskets and packings. An improperly cleaned machine may contribute considerable numbers of organisms to the milk. Another factor contributing to higher counts on homogenized milk is the breaking up of clusters of bacteria, allowing more colonies per milliliter to appear on the agar plate.

The high-count problem may be combatted by thorough cleaning and sterilizing of the machine plus an increase in pasteurizing temperature. This is possible because the dealers need not worry about cream line destruction. From the standpoint of flavor improvement a higher-than-normal pasteurizing temperature may be desirable.

Homogenized milk has a tendency to "creep" or seep out under the bottle cap, making an unsightly package. Some control of this difficulty may be attained by the elimination of overfilling of the bottle, by keeping the product cold at all times, and by careful handling to keep the milk out of contact with the cap.

The disposal of route returns may be a problem in some instances. Ordinarily returns may be converted into cream and churned or utilized in various ways This cannot be done with returned homogenized milk. The fat losses in separation and churning are so high as to make this method of disposal impractical. Returned homogenized milk may be used in cultured buttermilk, chocolate milk, Jewish sour cream, ice cream mix, etc. Returns should be kept at a minimum in all events.

In the last analysis, the question, "Shall I homogenize?", must be answered by each dealer individually. There can be no doubt in any one's mind that homogenized milk is here to stay. The demand for it has been built up by the dealer in most instances through competitive advertising. It has caught the consumer's fancy and the demand is increasing. Where the necessary sales volume is present and where a premium can be obtained for either the plain homogenized or the vitamin D fortified product, there can be no question as to the advisability of installing the necessary equipment and going into production. On the other hand, if homogenized milk must be sold at the same price as regular milk, the dealer is saddling himself with a heavy-cost burden which will markedly reduce his profit margin. The installation of homogenizing equipment will create more problems than it will cure and there is little doubt but that the household trade has been oversold on the merits of the product. Nevertheless, if demand or competition is forcing the dealer to homogenize, he should study his processing sequence carefully, buy only *proven* equipment, and obtain the best advice available in dealing with problems as they arise.

He Answers To The Name Of "Doc"

Some people call him "Doc", others call him "Bob". His students have been known to refer to him as "Old man milk himself". New York State dealers know him as a thoroughly capable milk scientist and a mighty fine man. Readers of the American Milk Review will recognize him as one half of the Holland-White team that conducts the column called Industry Problems. We know him as a friend and the spark plug of those wonderful milk can rolling contests up on the Cornell campus. We think that you'll find his observations on the pressing question "Shall I Homogenize" something you cannot afford to miss.

Cancer's danger signals

1. Any sore that does not heal
2. A lump or thickening in the breast or elsewhere
3. Unusual bleeding or discharge
4. Any change in a wart or mole
5. Persistent indigestion or difficulty in swallowing
6. Persistent hoarseness or cough
7. Any change in normal bowel habits

can be your safety signals

Cancer is curable if discovered early and treated properly

If any of these symptoms appear, see your doctor *at once.*

Write for the booklet about cancer. Just address your request to "CANCER".

AMERICAN CANCER SOCIETY, INC.

A New Method of Supplementing Fluid Cream with Frozen Cream

It Producers a Product Satisfactory for Whipping or Coffee and Can Ease Pressure from the Spring Flush

By **H. V. ATHERTON and ALEC BRADFIELD**
University of Vermont

Exclusive feature AMR

A great deal has been accomplished in the way of storing seasonal surplus milk for future use in the field of manufactured products. However, very little help has been forthcoming for the milk dealer who handles fluid milk and cream. The fluid milk handler still has some trouble in procuring enough milk and cream for the trade during the last three months of the year, and often pays a price premium. On the other hand, these same dealers are confronted with an oversupply in the early summer months. Much of this oversupply must be disposed of at a loss. Considerable relief from this situation could be obtained if some of the product was stored in the months of flush production and sold during the short production period. The volume involved probably precludes any possibility of doing this with milk, but there are possibilities with cream.

Since 1927 quantities of cream have been stored in the frozen state for use in ice cream. Few attempts have been made to use this product in fluid cream. There are two reasons for this. First, Federal, State and Municipal laws prohibit the presence of foreign materials in fluid cream. The anti-oxidants used to assist in preserving frozen cream flavor are definitely classified as foreign ingredients in fluid cream. Secondly, the freezing and thawing process so changes the physical characteristics of cream that it has not been acceptable as fluid cream. The defects that appear are oiling off when used in coffee, cream plug, and whipping difficulties. When homogenization is practiced in order to overcome the first two defects, feathering (in coffee cream) appears and the whipping ability is further reduced.

Recent developments in processing cream for freezing have eliminated the necessity of adding anti-oxidants. This removes the legal objection of the presence of added foreign ingredients. The process is merely that of heating the cream to a higher temperature for a shorter period of time.

Trout and Scheid (2) show that "fresh, high-quality cream, pasteurized at 165°F. for 15 minutes or at 185°F. for 5 minutes withstood −10°F. storage for 3, 6, or 12 months without appreciable development of the oxidized flavor." They point out that exposure of 185°F. for 5 minutes produces a slightly superior keeping quality but that the cooked flavor imparted by such exposure was still evident to some extent even after storage for a year. McFarland and Burgwald (1) reported that samples heated to 172°F. for 1 minute and for 5 minutes kept well and though they "developed an objectionable cooked flavor at first, it diminished sufficiently after one month in storage to become unobjectionable." These and other workers have shown that normal exposure of 150°F. for 30 minutes cannot be depended upon to stabilize flavor during the storage period.

The authors have conducted experiments during the past year that have led to a method of processing frozen cream so that the physical defects have been largely overcome. The aim was to produce a 40% butterfat cream that could be sold as whipping cream, or standardized to a lower butterfat content for use as coffee or cereal cream. Any attempt to produce a satisfactory product from all frozen cream was unsuccessful. After many trials, mixing varying amounts of fresh and frozen cream, it was found that frozen cream to the amount of half of the mixture was the limit that could be used. All succeeding trials were conducted on a mixture of half fresh cream and half frozen cream.

It has long been recognized that homogenization is necessary in order to re-emulsify frozen cream. The freezing action breaks down the protein-like membrane around the fat globules. This causes

DON'T RUSH ME, MISTER

A drummer friend reports calling on a Vermont farmer during milking time. The farmer apparently oblivious of the salesman's presence went about his chores with never a word of greeting. When the last cow was finished the farmer poured a little milk into the cat's dish, took a drink from the pail himself, strained what was left into a can, rinsed out the bucket and turned to the drummer. "There", he said, "the milkin's done, the cat's fed, I've had my supper, 'n got the dishes washed, naow what do you want?"

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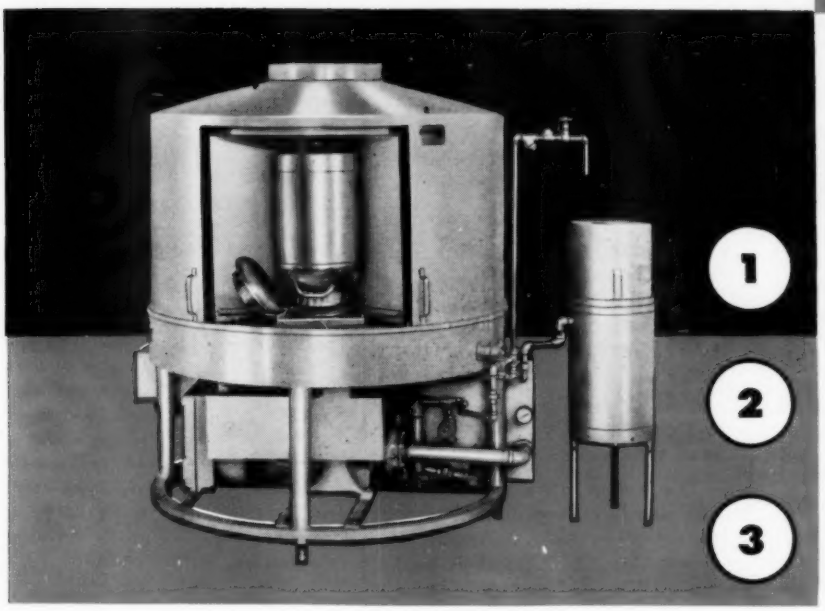

Now even the small or medium size plant can get high efficiency can washing — economically. MotoRo, the complete motor-driven can washer, cleans 180 cans and covers an hour. Cans are not just washed . . . they are given 6 intensive treatments. Each can is washed with a whirling scrubber, steam sterilized and clean air dried. Economical too, MotoRo saves steam and water. Measured detergent flow, metered water, controlled and regulated temperatures assure maximum effectiveness of wash treatment.

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Wash Whirling scrubber actually forces wash solution across all interior surfaces, scrubbing off all dirt.

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fat clumping, which leads to cream plug and oiling off, and it removes the constituents that are necessary for whipping. Homogenization redistributes the fat globules, thus overcoming the tendencies to cream plug and oiling off. However, homogenization at the pressures commonly used causes feathering and almost entirely destroys the whipping ability of cream.

Homogenize at 100 Lbs. PSI

It was felt that it might be possible to reduce the homogenizing pressure to the point where the protein would not be destabilized (the cause of feathering) and still redistribute the fat globules so that cream plug and oiling off would not appear. Many trials were run at successively reduced homogenization pressures. A pressure of 100 lbs. per square inch was found to give the desired result, provided that the temperature of homogenization was at least 140°F.

Higher homogenization pressures produced a poorer quality product for either whipping or coffee cream purposes. Additional whipping time was necessary, and the whipped cream showed a poorer body and excessive drainage of liquid. The volume of whipped cream decreased as homogenization pressure increased. From the standpoint of the resulting coffee cream, increased pressures resulted in the presence of cream plug and oiling-off. One serious problem, the presence of a heavy scum layer on the surface of the coffee when the cream was added, was encountered in the lower pressure samples. No reason was immediately evident for this condition. However, the problem was removed by increasing the homogenization temperature, so no further study of the factor was made at this time.

Results showed that temperature was of lesser importance for whipping cream than for coffee cream. A homogenizing temperature in excess of 100°F. was known to be necessary as the frozen fat did not melt completely below that point. Cream homogenized at temperatures of 100° and 110°F., showed a tendency to form cream plug and to oil off. In addition it did not blend as well in coffee and the above-mentioned scum was evident. A temperature of 125°F. removed the first three defects but the scum was not eliminated until a temperature of at least 140°F. was employed.

Methods of Thawing

Considerable work has been reported on the relative merits of fast and slow thawing of frozen cream. Two methods are practiced. One is to remove the cream from cold storage to a 40°F. room and allow it to thaw completely. This takes about two days for a 50 lb. can. During this time there is the possibility of some bacterial growth, and development of acid and objectionable flavors. The other method is to immerse the can of cream in warm water, while still frozen, in order to loosen the cream from the sides of the can. Remove the frozen block from the can, cut up and place in pasteurizer with the fresh cream. This method produces the problem of cutting up the frozen cream and is accompanied by considerable oiling off during the heating period. The oiling off did not adversely affect the resultant product. Neither was there any variation in the fat test in different parts of the vat, provided plenty of agitation was provided. Both methods of thawing gave equally satisfactory results. The method used would depend to a great extent on the equipment available.

Quality Cream a Must

The most important point in the entire operation is the processing of the original cream for storage. The cream must be of good quality. It must be separated from fresh milk of good flavor. The separator and all equipment must be absolutely clean and sterile. The cream should be pasteurized as soon as possible after separation. Temperatures of 165°F. for 15 minutes or 185°F. for 5 minutes appear to be most satisfactory. Freezing should be accomplished quickly, therefore it is advisable to cool to as low a temperature as possible at the cooler. The ordinary milk cooler does not usually cool 40% cream to as low a temperature as milk. It may be necessary to pump the cream over the cooler at a slower rate or provide a lower temperature coolant in order to obtain the desired results. Of course, if a special cream cooler is available with plenty of refrigeration the results will be entirely satisfactory. The nearer the cream is to 32°F. when it enters the freezing room, the sooner will the freezing process start.

Containers are usually single service tins holding fifty pounds each. Almost any tin or tinned container is satisfactory provided it is clean, sterile and free from rust. Results indicate that size and shape of container make no difference to the quality of the finished product, provided freezing is accomplished before any bacterial action can occur. Nearly identical freezing times were noted with the use of tall, metal ice cream cans as compared with shorter tin cans. It took approximately 30 hours in the storage room at −8°F. to freeze the five gallon containers entirely and approximately 24 hours for three gallon cans, regardless of which style container was used.

The Cost

Storage charges for cream in Vermont, as of June 1, 1949, were $.60 per 100 lbs. for the first month and $.25 per 100 lbs. for each succeeding month. Based on these rates the cost of storing cream for six months is $.038 per quart. An additional charge of $.50 is made for each withdrawal regardless of size. This would add from $.001 to $.01 per quart

(Please turn to Page 53)

TARHEELS TOPS IN JUDGING

News of a North Carolina victory in the All Southern Dairy Products Judging Contest has meandered up this way in a pleasant leisurely fashion. Outside of the fact that the contest took place in late October it is a prime piece of information.

The North Carolina boys took all the first places there were to take with the exception of cheese. University of Georgia captured the honors in this event.

North Carolina and Georgia divided the first five places in All Products. The Tarheel's second, fourth and fifth places gave them the team edge over Georgia's first and third. Tennessee gained the third position in the team scoring.

Individual performances found Bruce Glanzer, North Carolina's largest wheel, scoring clean victories in both milk and ice cream. Ashe of Tennessee was top hand in butter while Maret of Georgia lead the field in cheese. Morgan of Georgia was the number one man in all products.

The contest was a five team go with representatives from University of Tennessee, University of Georgia, Virginia Polytechnic Institute, Alabama Polytechnic Institute, and North Carolina participating.

Team summaries were as follows: MILK, 1st North Carolina, 2nd University of Georgia, 3rd Virginia Polytech. BUTTER, 1st North Carolina, 2nd University of Tennessee, 3rd University of Georgia. CHEESE, 1st University of Georgia, 2nd North Carolina, 3rd University of Tennessee, ICE CREAM, 1st North Carolina, 2nd Virginia Polytech, 3rd University of Georgia. ALL PRODUCTS, 1st North Carolina, 2nd University of Georgia, 3rd University of Tennessee.

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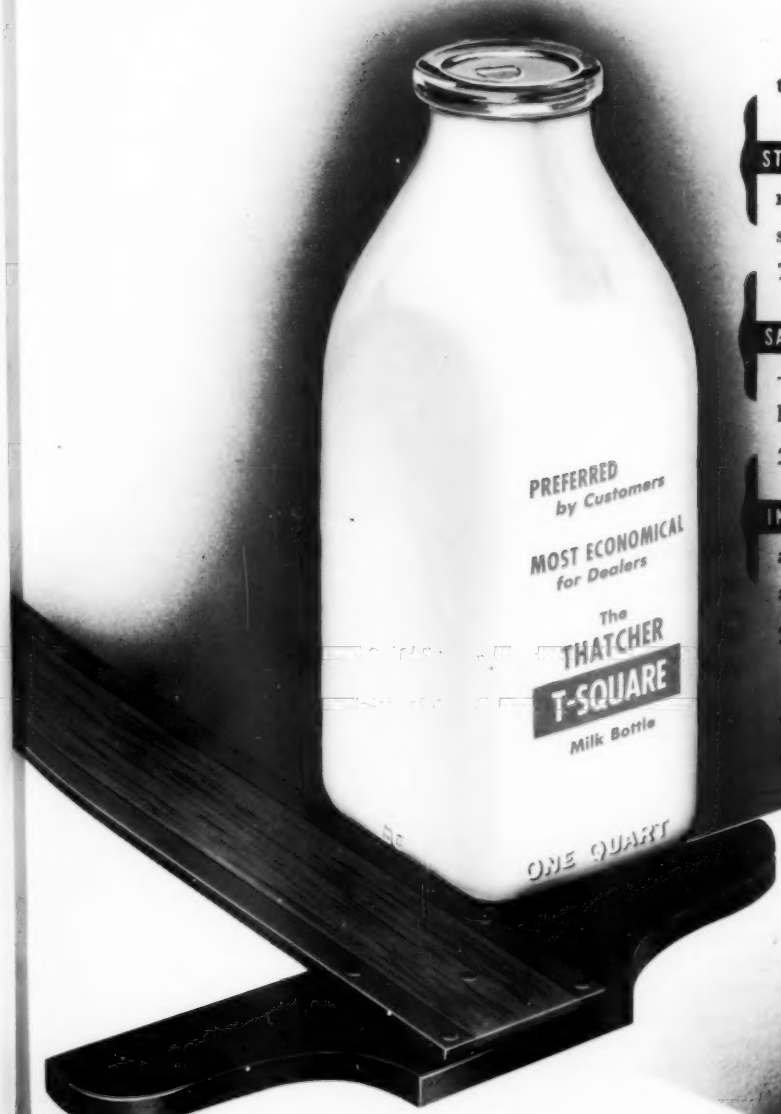
THATCHER T-SQUARES®

The most significant development in milk merchandising since the invention of the first glass milk bottle . . . . Thatcher's T-Square milk bottle opens an entire new field of opportunity for milk dealers. Not since Dr. Thatcher's first glass milk bottle revolutionized the distribution of pure milk have milk plant owners had a better chance to improve operations.



Here is what Thatcher T-Squares, successor to the original glass milk bottle, will do for you:

STEP-UP PRODUCTION Light weight and small size mean faster, easier, efficient handling; more plant space; less breakage; and more volume per delivery. *T-Square your production.*

SAVE MONEY Amazing economy at every turn — cap and hood costs less; overcomes expensive outlays for trucks, and cold room expansion. *T-Square your finances.*

INCREASE SALES Streamlined modern design — a sensational sales appeal; gains 50% more refrigerator space; sells 3 bottles instead of two. *T-Square your sales.*

Call the Thatcher Representative nearest you or write direct for full information so your dairy can convert to T-Squares as soon as possible.

THATCHER GLASS
MANUFACTURING COMPANY, INC.
Elmira, N. Y.

The Morning's Mail

Right Place, Wrong Name

Gentlemen:

On page 16 of Volume 11, November 1949, of The American Milk Review, we read the first eight lines of this article, "Mississippi State Wins Student Judgement Contest" with interest; however, when your writer makes the statement that these students were from "Old Miss.", my interest was immediately lost. For your information, as well as your protection, I would suggest that you inform your writer that there is a heck of a lot of difference between "Old Miss." and Mississippi State College. Would suggest your looking through your files to ascertain this statement.

It is hoped that you don't receive the normal punishment when a "Mississippi State" man is called an "Old Miss." man.

Yours truly,
ALUMNUS.

Dear Alumnus:

Your letter of November 19 has just arrived in the morning's mail. It has left my head bloody and bowed. In fact the pins with which you have fastened back my ears are the talk of this office.

Somehow I seem to be fated to go through life putting people in schools where they wouldn't appear at a respectable dog fight. Once I wrote a piece about a gal who went to Kansas State Teachers College or some such place. I simply shortened the name to Kansas State, in order to save wear and tear on my typewriter ribbon. I had to leave town for three weeks and was called everything from John Brown to a subversive alien. Now, with the best of intentions, I boot another one. The horrible thought occurs to me that perhaps "Old Miss." is a designation reserved for those who call Missouri their Alma Mater. Am I right? In any case my profoundest apologies for the error. I will call the attention of our readers to the bloomer and when we publish the story of Mississippi Champions, in February, I will make absolutely sure that the boys come from Mississippi State College. Well anyway they did a great job out at Los Angeles.

My name is Norman Myrick, but everybody sooner or later calls me Myron Normick. It's a rough world.

Cordially,
NORMAN MYRICK.

P.S.— If it ain't Missouri, then who the heck is it? N. M.

Dear Mr. Normick:

Please accept my apologies for failing to give you the correct terminology to be used in referring to state schools in Mississippi. The Mississippi State College is the old A & M College of Mississippi, located at State College near Starkville, Mississippi. "Old Miss." is the University of Mississippi, located at Oxford, Mississippi. Incidentally, as far as we alumni of State College are concerned, soda jerkers, curb hoppers, drugstore cowboys, lawyers, and newspaper editors attend "Old Miss.".

As far as I know, "Old Miss." has no connection with Missouri. In our library, we find that the abbreviation for Missouri is *Mo.*

Again hoping that this bit of information will be useful to you.

Yours very truly,
ALUMNUS.

Introduced Reconstituted Milk

December 7, 1949.

Gentlemen:

In your November issue of American Milk Review, I see where you printed an article on Fresh Concentrated milk for bottle use. In this article you state that Meredith and Stoltz introduced this Concentrated bottled milk.

There is no truth in this statement, as you can see by the photo copy I am enclosing to you.* I, Ray Miller, was the one that introduced this milk and conducted as many consumer experiments as probably anybody else, and I got no such consumer reaction as printed in this article, such as flavor objections on page 44 column two.

Of course, I can see why the consumers and judges returned this verdict, because this milk was not processed the way the article says in my plant. Neither did I send out questionnaires asking for comment, which would lead to suspicion. By that I mean if I told the consumer the milk was different, most anybody likes to be smart so I could get various comments. But with those same consumers I could give the same two glasses of fresh milk from same bottle and ask them to tell the difference, and they would pick one for the concentrated milk, or I could take two glasses of the concentrated milk with half water and they would pick one for fresh milk.

I had fifteen dairy stores over Columbus. I made my tests by handing the customer a glass of milk with no explanation and I found nobody getting different flavors. I got the best of reaction in every case. Of course I had no salty water to mix, as I used the same Columbus water every time and was always sure it was cold, otherwise the hot city water would warm the milk and milk is generally served cold. Neither did I get any cooked taste as I did not process this milk according to the way the article stated. You could get a sweeter and richer taste before it was diluted, but without dilution it surely made a grand milk for coffee, cereal or fruit.

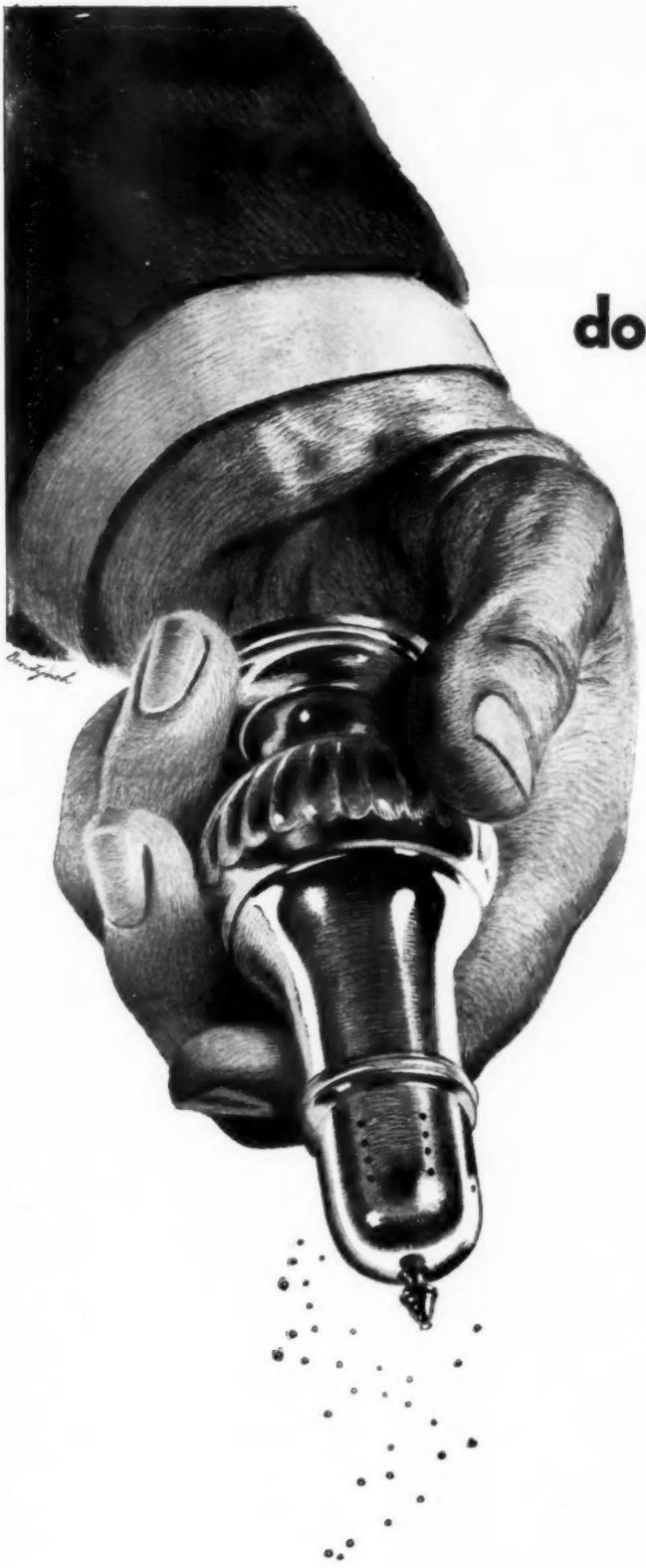
The reason it never went over, was because every distributor in the city fought it along with the farmers. The farmers thought it would hurt their market, and the distributors had no pans except the large distributors who had large pans. They worked on it time and again, but never came up with the same product. They tried to sell theirs, but when the restaurant men put it in creamers the next morning it came out in a chunk, mine flowed freely. Of course they told everybody they had the same things, the other product not being satisfactory it was hard to convince their customers along with all the unfavorable publicity they gave it.

Along about the time it began to win its way in the market, I sold out and nobody worked it, but had I processed it during the war it would have been a honey.

Now, I do not know how you, Mr. Trout or Mr. Quackenbush got this misinformation, but you can see by the photo copy the article is wrong. This milk properly processed has no criticism. I sent samples in vacuum bottles to nearly every state in the union and Honolulu, either by express or by plane.

Yours truly,
RAY MILLER.

*Refers to an article entitled What Will Ray Miller's Duo-Rich Milk Mean to Dairy Trade? Introduction of Concentrated Milk In Bottles Raises Question. This article appeared in the Nov. 14, 1934 issue of Dairy Produce.



Better start doing this to part of your money

YOU KNOW how money is!

Today it's in your hand, and the next day it *isn't!*

A lot of people, however, have found an excellent way to make certain they will have money when they need it most.

They *salt* away part of their pay each week in U. S. Savings Bonds through the Payroll Savings Plan where they work.

They know that saving this way assures them of the money for a down payment on a new home . . . a new car . . . or retirement when the time comes.

Furthermore, in ten years they get back $4 for every $3 invested in U. S. Savings Bonds.

Why don't *YOU* start saving money *regularly* and *automatically* where you work, or at your bank through the Bond-A-Month Plan?

Automatic saving is <u>sure</u> saving— U.S. Savings Bonds

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.

PLAIN TALK from a PLAINS STATE

By **JOHN BURNHAM,** *Fargo, North Dakota*

IT HAS BEEN MY FATE—good or bad — to have spent quite a bit of time with professional educators. I have been impressed by the encrusting structure of pedagogy they have set up. Teaching, which began centuries ago with one guy telling another how to do something, now is divided into a myriad of college courses. There are "schools of thought" regarding teaching, just as the longhairs with their paint brushes plug Matisse or Van Gogh. Medicine is the same way, with some psychiatrists splitting your personality from left to right – depending on your politics – and others holding out for original sin and the fact that you were a frustrated bottle baby still sucking your big toe at age of two years.

A couple years ago I sat in on one of these pedagogical kaffee-klatsches and heard an eastern big shot expound. He was one of those chaps with more degrees than a thermometer – I heard later from a colleague of this super professor that his own children were utterly undisciplined brats hell bound for juvenile court.

Anyhow, this bird, with an ersatz Oxford accent picked up on a student tour in 1927, was telling how teachers in the lower grades could learn to understand their pupils. He had two methods, one was the geometric, the other he called "anecdotal." The geometric he chalked on the board as a number of little circles which he connected with arrows. Circles indicated the individual children, arrows the line of friendship. An arrow from Johnny to Mary showed that Johnny liked Mary. Then the professor chalked onto this Johnny-Mary line little V-shaped arrowheads at each end. That meant that Mary liked Johnny, even as Johnny liked Mary, a nice reciprocal friendship which could play hell when they got up in the eighth grade and someone unscrewed the light bulbs at the Junior Hi mixer.

* * *

The professor went on diagramming circles and arrows, like a coach drilling his muscle-brains class the Friday before the big game. One that looked like a forward pass play with lines all wheel-spoked from one kid to the others he explained as a case of juvenile frustration. Johnny loved Mary and Helen and Winnie, liked to play in the school yard with Billy and Paul and Freddie – but the arrows all pointed one way, with no arrowheads on the other end, which meant that nobody really cared to play with Johnny. Should've used Lifebuoy.

Then there was the anecdotal method. If Mary in her juvenile innocence whispered to Johnny that "Ma sure crowned pa when he came home at 2 a.m. this morning," snoopy old teacher, cocking one ear, could deduce that Mary's daddy made an occasional visit to Joe's pretzel and tipple palace down on the corner. Teacher, it was explained, could gather an apronful of these off-the-record remarks made by her cherubs and thereby understand them better and, it followed, do a better job of teaching.

As the session recessed I staggered to the hallway for a quick cigarette. My host, with the super-cerebral professor in tow, came over and greeted me. He was effusive in commenting on the lecture we had just heard, and asked my opinion. That candidness which influences people but doesn't make friends rose to the top, and I said dryly that I thought the methods too involved and pedantic, and I thought classroom teachers would become so tangled in the maze of pedantry that they would lose sight of the purpose. And lastly, I said, "There isn't a dairy farmer or a herdsman in America who is worth his salt who doesn't know all the things you said today. Not by words or graphs, but by sensing them. Any man who schools a hunting dog or a saddle horse, any man who tends a herd of milk cows must – if he is successful – have a sixth sense which attunes him to the mood and feelings of the animals with which he works." The professor and my host walked away, in a manner which I felt was somewhat cool.

* * *

In fairness, I agreed with their unspoken censure of my remarks. I had spoken impetuously, unkindly, and perhaps with youthful arrogance. On the other hand, there is a certain satisfaction in being honestly blunt. (And, too, it is seldom that we can indulge such a verbal luxury. Too often we are beholden because of economic or social ties.)

But every man who has lived and worked with milk cows – I say "lived" not in a literal sense, but a good husbandman does live in mood and thought with

Hard on the heels of John Burnham's copy for the January issue came an invitation to visit him in his native habitat. The invitation was accompanied by the front page of a Fargo newspaper that featured a story about the area's thirty below weather. Inasmuch as it happened to be 65 in New York that day we advised friend John that we would be out as soon as we got the lawn mowed.

his soil and animals — will confirm my views. I've seen my own father on a Sunday afternoon stand in the barnyard and just watch the cattle while they were exercising. He could judge by their appearance and action whether they were happy or unhappy, if some minor ailment or lameness afflicted one of them, if their coats and eyes and carriage of their ears showed a general appearance of well being. He never put it into words, but that was what he was watching. And he was a better dairyman because of it.

* * *

A cowboy will hook his heels over the rail of a corral fence and watch a bunch of horses as they walk about, watch them make friends or pick quarrels, observe as they go over to the tank for a drink, roll in the dust and get up with a spasmodic action, and shake the dust from their coats. That cowboy will just sit there, squint-eyed, and he can pretty well size that remuda up — that little buckskin is tough to handle but will carry a grown man day after day on sparse care; that Roman-nosed sorrel will be hard-headed to break and awkward in cutting work afterward. That hog-fat little bay has just come in from grass (note those splayed hooves untrimmed by travel or work or handling?) and will be pliable to break but will drop off to skin and bones if given a modicum of hard work in handling cattle.

So it goes. An Iowa farmer knows his hogs by long attendance upon their wants and long attention to their actions and moods. The dog handler can talk intelligibly to his dog in a language mystifying to the bystander.

But especially is this sixth sense of the husbandman important with milk cows. The cowboy belongs to a dying race, the dog handler caters to sport, a luxury business.

* * *

But with post-war population statistics bulging, with 55,000 new Americans appearing at breakfast each morning, with GI offspring bringing growing pains to every school board in the land, milk and the care of milk animals bids to be a fairly permanent business.

As long as that is true we shall need dairymen. Preferably dairymen who have had some specialized training in classes or colleges teaching feeding, management, breeding, dairy sanitation.

But let us never forget that the "priceless ingredient," to steal an advertising phrase, is that intangible which never can be learned in a classroom. It is that instinctive understanding of the animals with which we work. Mostly it is reciprocated, for a milk cow or cow pony or spaniel has a more complete index of his master's character — and more accurately — than three finance companies and the family clergyman can ever learn. If you are angry or excited or afraid the animal senses it as quickly as you do yourself.

So, in the maze of educational specialization, let's not forget this priceless ingredient, even though we don't know the word for it. (The French might say "entente," and the Latin Americans "simpatico." We stumble with words and end by explaining, "My gosh, but that guy has a way with stock.")

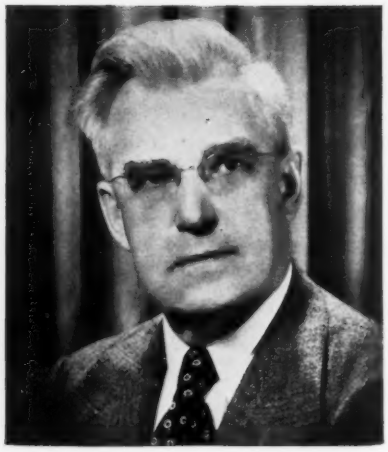
Whatever you call it, it is the ability to sense the moods and feelings, likes and dislikes, appetites and conduct of a milk cow or trotting horse or retriever. And if a boy or girl isn't born with it or doesn't learn it as a child, all the college courses in the world can't teach it.

But without it, without this attuned accord between man and animal, dairying cannot be wholly successful. For dairying, after all, is nothing but commercialized motherhood, with the herdsman the attending physician.

Let us never forget the importance of the bedside manner.

15,000 Milk Plant Operators Will See Your "REVIEW" WANT AD

Nofome
Time tested and time proved
SPECIALTY
Sanitary
CENTRIFUGAL
PUMPS
Nofome
Nofome Streamflo
BOTH the Nofome and Nofome StreamfloPumps have won unmatched performance records in the industry. Their three-bladed single-piece impeller is precision-designed to handle more pounds per hour without churning or foaming. Take-down is simple—clean-up is quick and easy. The few contact parts are carefully machined stainless steel or nickel alloy, highly polished to a gleaming finish. Both styles of pumps meet every sanitary code requirement. Write for Bulletin 9C.
Sanitary Milk-Handling Equipment is a SPECIALTY business
SPECIALTY BRASS COMPANY
Kenosha Wisconsin
Specializing in equipment for the dairy, food, beverage and chemical industries.



ALFRED P. HAAKE
General Motors

DEXTER M. KEEZER
McGraw-Hill

W. E. KRAUSS
Ohio Experiment Station

NDC WINTER CONFERENCE IS NEXT

Top Flight Speakers Scheduled for Annual Dairy Council Meeting in Chicago — Sales, Public Relations to Be Program Features

EIGHT nationally known speakers recognized as authorities in marketing, economics, processing and sales promotion will appear on the program at the Annual Meeting-Winter Conference of the National Dairy Council in Chicago at the LaSalle Hotel, January 26 and 27.

With plans nearing completion, Carl A. Wood, Vice President in charge of sales, Cherry-Burrell Corp., NDC Board Director, and Program Chairman of the Annual Meeting Advisory Committee, stated that in developing the program this year special emphasis was placed on obtaining speakers who know the Main street problems of big and small operators in the dairy industry. "Among the problems to be tackled by these nationally known speakers", said Mr. Wood, "are some of the disturbing factors in competition, consumption of dairy foods, sales promotion, and public relations."

One special feature of the program will be the recognition of 35 years of the National Dairy Council in the interests of the dairy industry. How N.D.C. has stimulated growth and progress in the dairy industry through its program of research and education will be told by Mr. Hult in a presentation, dramatized by colored slides, to show in a graphic way the significant contribution of N.D.C. to industry, education, and the consuming public.

The dairy delegates from coast to coast will be welcomed by the Mayor of Chicago, Martin H. Kennelly, who repeatedly has acclaimed Chicago as an unexcelled host to millions of convention-goers from all over the world. The Mayor in a pre-Annual Meeting statement hopes that "every delegate to the forthcoming meeting of the National Dairy Council will have a profitable time during his stay here." Dairy executives will also hear from S. A. Kostakos, President of the Milk Foundation, Inc., Chicago, host to the Annual Meeting.

At the opening session, a luncheon in the Grand Ballroom, Thursday noon, some answers will be given to the $64 question: "What's Ahead for American Business in 1950." Dr. Dexter M. Keezer, Director of the Department of Economics of the McGraw-Hill Publishing Company, New York, will discuss this topic. Dr. Keezer has a distinguished record as Deputy Administrator of the Office of Price Administration, Economic Adviser to the Mission for Economic Affairs in London, public member of the National War Labor Board, President of Reed College in Oregon, newspaper correspondent and editor, and a Professor of Economics in several colleges and universities.

Another program highlight deals with new ways to meet today's competition. Three top-notch leaders in the dairy foods industry are scheduled to take various phases of this topic. W. E. Krauss, Associate Director of the Ohio Agricultural Experiment Station, Ohio State University, will throw new light on dairy food values. George W. Shadwick, Chief, Quality and Control Laboratory, Beatrice Foods Company, Chicago, will devote his time to a discussion on processing and handling of dairy foods. Leland Spencer, Professor of Dairy Marketing at Cornell University, Ithaca, will discuss new angles in marketing dairy foods.

Tomorrow's Sales Start Today

Highlight of the two-day meeting will come on Friday afternoon following a luncheon, when Alfred P. Haake, Industrial Consultant, Economist and Lecturer, will stimulate thinking on "Tomorrow's Sales Start Today." As consultant to General Motors Corporation, Dr. Haake knows business in a practical way and understands the importance of a sound public relations program to keep the cash registers ringing.

At the opening luncheon session of the Annual Meeting, the Board of Directors of the National Dairy Council for 1950 will be announced. The Nominating Committee responsible for recommending to the Board the slate of Directors for the coming year consists of Dr. David Peck, Chairman, Bowman

Dairy Company, Chicago; A. H. Lauterbach, Pure Milk Association, Chicago; and R. H. Strickland, Solar-Sturges Manufacturing Company, Melrose Park, Illinois.

According to advance registration, industry is taking an increased interest in the two-day Annual Meeting. The Attendance Committee, headed by Neal D. Kelley, Assistant to the President, assures the delegates of many prizes which cannot be divulged until the opening session of the second day.

Carl Deysenroth, Executive Director of the Milk Foundation and host to the two-day meeting, has completed elaborate plans for the Annual Meeting banquet at the close of the first day's session. Top talent in the field of entertainment has been obtained to give the Grand Ballroom at the La Salle Hotel a setting for plenty of laughter and relaxation.

•

Ice Cream Gets Hines Label

Duncan Hines Is Brand Name for New Line of Food Products — Trial Runs Produce Excellent Results

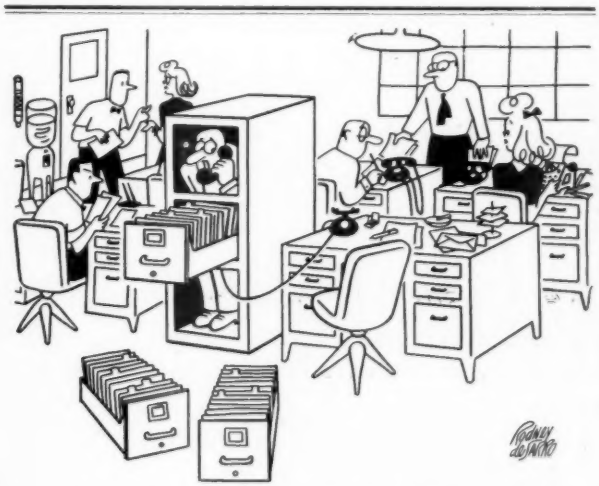
DAIRY PRODUCTS bearing the famous name of Duncan Hines will soon be on the market. A line of more than 25 top quality food products is already being marketed through more than 500 outlets. Inclusion of dairy products, particularly ice cream is expected in the near future.

The DUNCAN HINES line of food products were the result of an arrangement entered into between Roy H. Park, publisher and advertising and public relations consultant, and Duncan Hines, who, through his 15 years of work on his books on eating, and his more than 2 million miles of travel, is probably the best known name consistently connected in people's minds with high quality foods and good eating.

The line was first developed and introduced by Park, with Hines' cooperation, in selected cities in New York State as part of a nine-week test campaign begun in the summer of 1949, with plans to go nation-wide on a food distributing and franchise arrangement basis.

Results from the test were so successful and encouraging that steps have been taken to form a corporation with a program to distribute through regular channels by appointment of brokers and wholesalers.

Under present arrangements, Park is promoting and handling expansion of the line. He reveals that a limited number



"Look, Ruth- can I call you back this evening? There's really not much privacy around here"

COPYRIGHT 1949 CARTOONS OF THE MONTH

Easy To Sell....

COTTAGE CHEESE

Profitable Too!

Sell milk solids in the form of Cottage Cheese. . . . Your best profit maker.

Let Gundlach tested sales getters sell your Cheese.

Literature, Posters, Plans

Complete assortment of Bottle and Knob Hangers; Folders; Posters; Dominations; Truck Displays.

Flavored Cottage Cheese

Promotional material to sell pineapple, pimento, whipped cream, spring salad and other popular cottage cheese flavors.

Containers That Sell!

Sensational, new Gundlach 12 oz. "Plastic Deep Dish" or handsome 9 oz. "Golden Goblet" delight customers; boost sales and profits.

We have the know-how to sell your cottage cheese and all dairy products.

WRITE, WIRE OR PHONE FOR DETAILS NOW!

G. P. GUNDLACH & CO.

"SERVANTS TO THE DAIRY INDUSTRY"

1201-07 West 8th St. Cincinnati 3, Ohio

KLENZADE

PIONEERS A NEW METHOD FOR CLEANING HIGH TEMPERATURE EQUIPMENT

This is it!

Flash-Klenz — formula LC-12, an organic acid wetting agent compound, goes to work on stubborn baked on milk fats and enemy milkstone and whisks the deposits off all metal surfaces of your high temperature equipment,

then . . .

Flash-Kleen formula HC-12, an advanced type of alkali cleaner, quickly saponifies and peptizes the remaining soil. Equipment is left spotlessly clean and ready for inspection.

For detailed instructions on cleaning of various types of high temperature equipment write Klenzade direct!

KLENZADE PRODUCTS, inc.

BELOIT, WISCONSIN

Chemical cleaning specialists serving the Dairy Industry with conveniently located branch offices, warehouses and distributors in principal cities throughout the nation.

KLENZADE

of items will be franchised, including the dairy lines, where pilot studies are underway with manufacturers *to make franchise arrangements for high test ice cream.*

Products used in the test campaign—six items of the more staple type canned vegetables, canned juices, and vacuum-packed coffee of a blend Mr. Hines has used for years — are still being offered, and 20 new items are being introduced — mainly relishes, appetizers, delicacies and the like.

Key men in the Hines-Park Foods of Ithaca, New York, are Duncan Hines, left, and Roy Park, right. The firm plans to distribute its foods on a nation-wide basis.

Hines-Park announced the original items by direct mail to high income families, newspaper and radio advertising. Response was far beyond expectations.

"Tide" magazine termed the Duncan Hines brand "sure fire". It said in a full-page illustrated story, "A newspaper campaign in Ithaca . . . produced results overnight . . ."

The article discussed the possibilities for Hines-Park thus, "to develop new outlets gradually, build up its own personnel and eventually get into the food distribution on a large scale".

The "sure fire" quality of the name was borne out by a survey made by station WLW, Cincinnati. Results showed the recognition of Duncan Hines' name rated 51 percent of that of Vice-President Alben Barkley from a sample taken in a large metropolitan city, an industrial city, a college town and a rural village. In the top income classes 63 percent of those interviewed could identify the well-known connoisseur. Furthermore, in the grocery trade the name was identified correctly by 100 percent of the chain and wholesale buyers and by 68 percent of the retail grocers.

Park points out that the aim and purpose of the firm is "to bring to homes throughout the United States an appreciation of good eating as exemplified by the name Duncan Hines."

Although Hines-Park has a higher-than-average pricing policy on some items, Park points out, "Best food costs more per can, but in terms of good nutrition and in eating enjoyment it is well worth the difference."

●

Ice Cream Opens Up On 1950

Flavor-of-the-Month Merchandising Campaign Backed with an Intensive Advertising Program

THE ICE CREAM INDUSTRY sets its 1950 sales sights with a special flavor-of-the-month merchandising event in February. Featuring cherry vanilla ice cream, the nationwide mobilization of selling forces will be keyed to booming sales of ice cream and fig cookies.

Representing the initial industrywide across-the-country promotion focused on one flavor, the event will be a cooperative

undertaking of the Ice Cream Merchandising Institute, the Fig Institute, the American Dairy Association and related food advertisers.

Full color advertising of the American Dairy Association in national magazines will spearhead the sales drive. Ads are scheduled for the February issue of Saturday Evening Post, February 14 issue of Look Magazine, February issue of Ladies' Home Journal and the March issue of Better Homes & Gardens which will be on the news stands the middle of February.

"Delightfully yours," reads the headline in the ADA ad. The copy continues, "temptation-of-the-month, refreshing cherry vanilla ice cream . . . with tasty cake-confection fig cookies! Um-m-m-m, good! De....licious, de....luscious, de....lightful!"

Sales Power Multiplies

Preceding the ADA advertising, the Fig Institute is reaching an additional 21 million homes with the same theme the early part of February through the advertising pages of the American Weekly and This Week. These publications circulate in the week-end editions of metropolitan newspapers from coast to coast.

More advertising power in this ice cream sales drive is generated by the National Biscuit Company. The NBC schedule includes: February 14 issue of Look Magazine, also the February issues of Woman's Home Companion and McCall's Magazine. As follow-up, the March issues of Good Housekeeping and American Home and the metropolitan magazine sections of the Herald-Tribune and the New York Times on March 5 will also carry full color advertising for fig newton cakes with cherry vanilla ice cream.

Another advertisement featuring cherry vanilla ice cream as the flavor-of-the-month will appear over the signature of the Marathon Corporation in the Saturday Evening Post. Other ads will appear in regional markets.

Special Store Displays

Special display material to merchandise "Cherry Vanilla Ice Cream 'n' Fig Cookies" at fountains and food stores will be made available through the Merchandising Institute of the International Association of Ice Cream Manufacturers, the Fig Institute and related food manufacturers in cooperation with the American Dairy Association.

More than 4,000 campaign sales kits will be distributed by the American Dairy Association to the ice cream industry.

"I know you'll hate me for this, but I'm here"

TIME IS MONEY—
THAT'S WHY L-W Sediment Testers INCREASE DAIRY PROFITS!

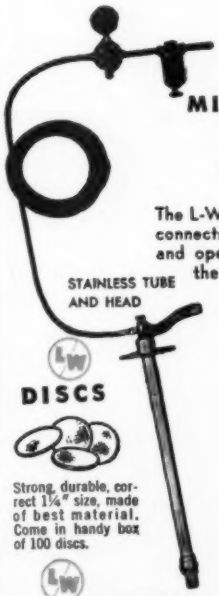
PATENTED

(RUST PROOF WHITE ENAMEL COVER—STANDARD EQUIPMENT)

L-W Mechanical Testers are recommended especially where large volume and accuracy—free from the possibility of human error—are essential.

MECHANICAL MILK SEDIMENT TESTER
MODEL "D"

This tested and approved product is serving in scores of plants throughout the country. Industry leaders like Armour, Swift, Wilson, Cudahy, Borden, Kraft, Pet, Carnation and hundreds of others, have been using the L-W Mechanical Tester for years. It is fully automatic . . . features a unique cut-off valve that assures 16 ounces every time. Note push-button control on handle and easy-to-read vacuum and pressure gauges.



L-W AIR-VAC
MILK SEDIMENT TESTER
MODEL E
Air-Line Operated Model "E"
Stainless Tube and Head

The L-W Air-Vac air-line operated Milk Sediment Tester connects directly with any air line already installed and operates from your own compressor. Included in the many special features of this new product are

REGULATOR—properly pre-set at factory, eliminates any possibility of change in rate of intake by the operator, assuring constant uniformity.
DIAL INDICATOR—for quick, visual determination of proper operating pressure.
AIR FILTER—for clean air . . . prevents any condensation, rust or foreign matter from coming in contact with the milk or restricting normal, easy operation.
LIGHT WEIGHT—for easy handling, resulting in considerably less fatigue.
EASY OPERATION—comfortable handle, push-button control and light weight combine to make the L-W AIR-VAC a pleasure to work with. 20 feet of dairy hose make wide range of action possible.

L-W DISCS

Strong, durable, correct 1¼" size, made of best material. Come in handy box of 100 discs.

PATENTED AND PATENT APPLIED FOR

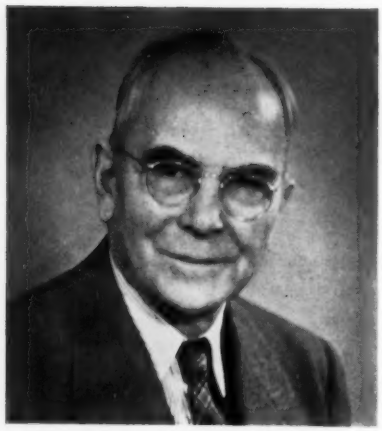
L-W CARDS
No. 5, front and back shown, ¼ actual size.

see your jobber or write to . . .

L-W DAIRY SUPPLY DIVISION
THE LANGSENKAMP-WHEELER BRASS WORKS, INC.
1266 SHELBY STREET, INDIANAPOLIS 3, INDIANA

In The Beginning

IT WAS CALLED "CHOCOLATL"



BENJAMIN P. FORBES

There is not a great deal about the chocolate business that Benjamin Forbes does not know. He embarked upon a career in this phase of the food industry in 1888 and has been at it ever since. During those six decades he has been general manager of the Hershey Chocolate Company, general manager of the Ideal Chocolate Company, and president of his own chocolate firm. He has seen one business vanish in the depression of 1921 and has had the courage to pick up the pieces and start over again. His life is a definition of the American spirit.

In this article he gives you some of the knowledge that he has gathered in the course of sixty-two years in chocolate.

***By* BENJAMIN P. FORBES**

President, The Benjamin P. Forbes Co.

THE STORY OF CHOCOLATE usually starts with Montezuma, the emperor of the Astecs, who, when visited some 400 years ago by Cortez and his soldiers, astounded them with the splendor of his court and the sumptuousness of his dinner service.

It was reported that the Emperor drank no other beverage save "chocolatl", a drink made from roasted cocoa beans, ground in crude stone mortars and flavored with vanilla and native spices. Cortez called the tree on which the fruit grew "Cacao".

C. J. J. Van Hall tells us "There is no doubt the Indians had cultivated cocoa for many centuries before this, for it played an important part in their popular traditions and legends.

"They believed that the plant was of divine origin and that Quatzalcault, a prophet of the Indian mythology, had brought the seeds from Paradise and sown them in the gardens at Talzitepec. By eating the fruit he acquired universal knowledge and wisdom, and was held in great reverence by the people."

The high regard in which the Indians held the fruit of the Cacao tree is no doubt responsible for the name given it by Linnaeus, "Theobroma", signifying "the food of the gods".

Cocoa was so highly prized in those early days that it was used as a medium of exchange or barter, and history relates that for ten beans a rabbit could be purchased, and a slave for one hundred. Therefore, the beverage from Cacao beans known as "Chocolatl" was only used by the very rich.

The beverage was very different from Cocoa or Chocolate as we know it today. It was made from corn and cocoa, roughly ground between two stones and boiled. Red pepper was added.

The Spaniards, at first, could not appreciate this mixture, but in the later part of the sixteenth century they learned to add sugar and still later vanilla and cinnamon. Prepared in this manner cocoa soon became popular among the Spaniards in America who kept the secret of preparing chocolate in cake form as long as possible.

The first European chocolate factories arose in Spain. One of the oldest recipes for chocolate cakes is given as follows: *Seven hundred cocoa beans, one pound and a half of sugar, seven ounces of cinnamon, fourteen grains of pimento, two ounces of cloves, three pieces of vanilla or seven ounces of aniseed.*

An Englishman Takes Exception

Commenting upon "The Properties of Chocolate" I quote from a publication before me printed in London for J. Roberts in the year 1724. The pamphlet was translated from the French by a physician, and "Published with the particular approbation of Mons. Andry, Counsellor, Lecturer, and Regal Professor, Doctor, Regent of the Faculty of Medicine at Paris and Censor – Royal of Books".

The doctor author of this treatise entitled "The Natural History of Chocolate", first attacks the Spanish theory that:

"Chocolate being by nature cold, it ought not to be used without being mixed with spices, which are commonly hot, that so they might, both together become temperate and wholesome".

"This", says the author, "was the jargon and practice of those times . . . but, with the least attention, one may easily discern that the quantity of oil that it contains, and the bitter-

ness that is perceived in tasting, are not the marks of coldness, since all bitters are esteemed hot, and since oil is a matter very near akin to, and necessary for fire . . . we shall experimentally demonstrate that chocolate is a substance very temperate, yielding soft and wholesome nourishment incapable of doing any harm".

He goes on to suggest persons using chocolate will benefit by omitting the peppers and spices and then says, "Health is so valuable a blessing that the care to gain and preserve it, ought to supersede any other consideration."

Away back in 1724 this author declared:

"A learned Englishman has carried his commendations so high concerning this property of chocolate that he has not scrupled to affirm in a Dissertation that he has published upon the subject, that one Ounce of Chocolate contains as much nourishment as a pound of Beef . . . In reality if one examines the nature of chocolate, a little with respect to the Constitution of Aged Persons, it seems as though the one was made on purpose to remedy the Defects of the other, and that it is truly the *Panacea* of Old Age."

"There lately died at Martinico a counsellor about a hundred years old, who for thirty years past, lived on nothing but Chocolate and biscuit. He sometimes indeed had a little soup at dinner, but never any Fish, Flesh, or other victuals. He was nevertheless so vigorous and nimble, that at four score and five, he could get on horseback without stirrups."

Chocolate After Two Centuries

A treatise on the subject of chocolate by R. Whymper gives a 20th century viewpoint in the light of modern analysis. You will note he is a little more conservative in his estimate of the food value of chocolate, and probably more accurate, since he has the advantage of the records of two added centuries of experience with the subject. Says Whymper, "The popularity of Chocolate is well deserved, for, besides being a sweetmeat, it possesses a food value of a high order."

We do not know Mr. Forbes and his two sons, Elton B. and Benjamin P. who are associated with him, as well as we would like to. However, it is our guess that Mr. Forbes did not beat around too many bushes during his business career. "How can I get rid of the watery taste in my chocolate milk?" a potential customer asked him. "Stop putting water in it." said Mr. Forbes.

He gives a comparison of chocolate with other well known foods in the following table. He quotes a Dr. Johnson as showing that "Cocoa essence contains as much flesh-forming bodies as the solids of dried milk," and Professor J. Forster has compared the heat-giving power of cacao and its preparations with some of our most valuable foodstuffs. Thus:

1 Kilo lean beef gives	**1,214 calories**
1 Kilo fat beef	**3,057 calories**
1 litre of cow's milk	**672 calories**
1 Kilo of hen's eggs (av. 18 eggs)	**1,678 calories**
1 Kilo husked earth nuts	**5,184 calories**
1 Kilo peas	**2,710 calories**
1 Kilo white bread	**2,528 calories**
1 Kilo cacao beans	**5,110 calories**
1 Kilo cacao powder	**4,167 calories**
1 Kilo chocolate	**4,763 calories**

Dr. A. W. Knapp, research chemist for Cadbury Bros. Ltd., suggests that in estimating the worth of a food it is usual to compare the fuel values, because the most important requirement in nutrition is that of giving energy for the work

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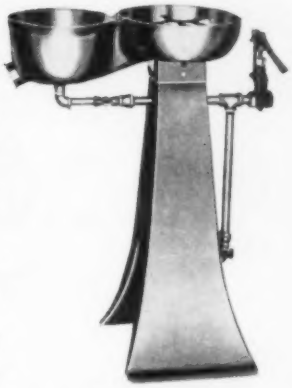

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Legs held firmly in place by a spring tension bearing, adjustable to suit your touch and to compensate for wear. Solid brass with nickel-plated finish. Removable needles of 18-8 stainless steel. List price $1.00.

Write for quantity discounts.

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PACIFIC DAIRY AND POULTRY ASSOCIATION
Our Butter Committee says
"Let's SELL Butter"
EMBOSS "BUTTER" ON EVERY QUARTER
GET "BUTTER" ON THE DINNER TABLE

WITH THE OLEO-BUTTER festivities scheduled for an early appearance on the congressional legislative docket both sides are rolling up their heavy guns. The American Milk Review has become increasingly dubious concerning the wisdom of fighting the issue out in legislative halls. As we see it the real conflict is in the market place. We were, therefore, really thrilled to see the evidence of butter sales-mindedness translated into action on the West Coast.

The exhibit, pictured here, appeared at the Milk Industry Foundation Convention in Los Angeles last fall. Gathered around the exhibit are Henry D. Greene, Executive Secretary of the Pacific Dairy and Poultry Association, who put on the exhibit, Marvin E. Neuman, President, Challenge Cream and Butter Association, G. H. Brockmeyer, Arden Farms, and Col. B. F. Castle, Milk Industry Foundation.

We believe that the oleo problem is a sales problem. We cannot forget that twenty years ago lard dominated the shortening market at twice the price of vegetable shortenings. Today the vegetable shortenings dominate the market at *twice the price of lard.* It wasn't price, that put vegetable shortening on top. It wasn't color. It was a selling and merchandising campaign that did the business. Ask Owen Richards.

of the body. A food may be thought of as being burnt up (oxidized) in the human machine in the production of heat and energy.

He gives the average composition of cacao beans and fuel value calculated from these figures as follows:

Average Composition and Fuel Value of Freshly Roasted Cacao Beans (nibs)

	Composition	Calories per lb.
Cacao Butter	54.0	2,282
Protein (total nitrogen 2.3%)	11.9	221
Cacao Starch	6.7	472
Other Digestible Carbohydrates, etc.	18.7	
Stimulants Theobromine	1.0	
Caffein	0.4	
Mineral Matter	3.2	
Crude Fibre	2.6	
Moisture	1.5	
	100.0	2,975

He further states:

"It will be seen from the above analysis that the cacao bean is rich in fats, carbohydrates and protein, and that it contains small quantities of the two stimulants, theobromine and caffein. In the whole range of animal and vegetable foodstuffs there are only one or two which exceed it in energy-giving power. If expressed in quite another way, namely as "food units," the value of the cacao bean stands equally high, as is shown by the following figures taken from Smetham's result published in the Journal of the Royal Agricultural Society, 1914:

"FOOD UNITS"

Turnips	8
Carrots	12
Potatoes	26
Rice	102
Corn Flour	104
Wheat	106
Peas	113
Oatmeal	117
Coconut	159
Cacao Bean	183

These figures indicate the high food value of the raw material; we will now proceed to consider the various products which are obtained from it.

As compared with our other popular breakfast beverages let us turn to the Farmer's Bulletin 249, an official publication of the United States Department of Agriculture.

½ ounce of tea to 1 pint water gives a fuel value per pound 15 calories
1 ounce coffee to 1 pint water gives a fuel value per pound 16 calories
½ ounce cocoa to 1 pint water gives a fuel value per pound of 65 calories

A pint of cocoa made with ⅓ milk, half an ounce of cocoa and one ounce of sugar would have a fuel value of 320 calories, and is therefore equivalent in energy giving power to a quarter of a pound of beef or four eggs.

Cocoa In the Diet

Regarding the effect of cocoa on the utilization of Dietary Calcium, an interesting article was published in the Journal of the American Medical Association Nov. 24, 1945. It refers to "experiments on rats at the University of Illinois . . . with a series of experiments on seven women students (ranging in age from 18 to 22 years), extending over fifty-one four day calcium balanced periods."

"The results of the experiments on human subjects were essentially negative in their significance in the sense that no deleterious effects on calcium metabolism of this particular brand of cocoa in the amounts consumed were revealed."

The cocoa used in these experiments was a medium priced cocoa containing 20.22% fat.

"An interesting finding in the experiments on human subjects reported here in a preliminary way was that the tolerence limit of cocoa was about one ounce daily. Larger portions induced headache, nausea and impared appetite. To consume the equivalent of one ounce of cocoa containing 20% fat in the form of sweet chocolate prepared with the minimum proportion of chocolate liquor (plain bitter chocolate) 15%, one would have to consume approximately 12 ounces."

To the above I would add, that in order to consume one ounce of cocoa in chocolate milk one would have to consume two quarts, which would be a rather unusual daily consumption.

As a Source of Riboflavin

The October issue of the Journal of Dairy Science has an instructive article by Gehrke, Thomas, Shetlar and Chitwood of the Department of Biology and Chemistry, Missouri Valley

College, Marshall, Missouri. The article indicates that the photochemical destruction of riboflavin in milk is quite rapid . . . pint glasses of whole milk exposed to direce sunlight of 28, 50, 66 and 72 percent after 30, 90, 120 and 210 minutes of exposure respectively. Shetlar reported that chocolate milks lose riboflavin very slowly when exposed to sunlight, the average loss of riboflavin after four hours for five different brands being 12% as compared to a loss of 80% for whole milk. "Chocolate milk as manufactured compares favorably to whole milk in riboflavin content as determined by the fluorometric procedure developed by Shetlar et al. The much slower photochemical loss of riboflavin in chocolate milk perhaps is due to the extra protection afforded by the added chocolate. This would indicate that chocolate milk might prove advantageous if the milk during the delivery was subjected to much exposure to light, provided the chocolate does not interfere with the assimilation of riboflavin after consumption."

"The common substitution of chocolate milk for whole milk in the diet, especially of children has been of concern to nutritionists until it could be established that no vital deficiency resulted from the substitution. Consequently it seemed desirable to check biologically the comparative value of chocolate milk and whole milk as a source of riboflavin.

"The comparative value of chocolate and whole milk as a source of riboflavin for the rat was investigated. Rats fed chocolate milk had the same rate of growth as rats fed whole milk when both milks were added to a basic diet deficient only in riboflavin. The rate of growth of rats receiving the basic diet supplemented with either milk was the same as that of rats receiving supplements of crystalline riboflavin. Therefore, at the level of feeding used in this experiment chocolate milk contains enough biologically available riboflavin to insure maximum growth of a rat. No evidence was found to indicate that the added chocolate interferes with the biological availability of riboflavin."

You've Got to Play It Straight

And now I will quote a letter received Dec. 7, 1949 from the Supervisor of Public School Lunch Program for the State of Ohio.

"Dear Mr. Forbes:

This is to acknowledge your letter of Nov. 30 concerning the use of chocolate flavored milk in our school lunch program. The comments which I make here will be in further clarification of my letter to you on Dec. 8, 1948. The serving of the product in the School Lunch Programs has been a considerable problem to us. Our interest in the matter is one purely of a health and nutrition nature.

1. For many years chocolate flavoring has been used in milk by dairies to camouflage the low butter-fat content which has often been around 2%. Unknowingly school administrators and parents have permitted children to be deprived of their lunch rights. Growing children need the fat and the vitamin A in milk which has been eliminated when milk of only 2% or less is provided.

2. In many instances, the quality of the chocolate food product has often been poor.

3. The daily consumption of chocolate flavored milk in the School Lunch Program dulls a child's appetite. This interferes with children consuming the proper amount of fruits and vegetables and salads which make up an important part of their daily food needs.

4. It adds more sugar to the diet of adolescents. Already various state dental associations are decrying the over-consump-

(Please turn to Page 70)

Meets All 3A Standards

Laboratory tests conducted under actual dairy operating conditions prove that the Waukesha Sanitary Pump cannot break down butterfat globules. This exclusive Waukesha advantage protects your milk quality, its cream and fat content, right straight through your production line.

You can multiply this Waukesha advantage by many years of service, too. Many dairies can boast of Pumps in use five, six, or seven years, handling a half million pounds of milk or more — and still going strong. That's stretching equipment investment out to a minimum!

Ask your jobber for all the details on the Waukesha Sanitary Pump with its Positive Displacement principle of operation and Twin Blade Impellers. Or write direct.

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Waukesha 100% SANITARY PUMPS
Dependable Product of a Responsible Manufacturer

DR. ROBERT F. HOLLAND

Problems of the Industry

DR. JAMES C. WHITE

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review". Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

●

Cooler for Small Plant

QUESTION — We operate a small milk business processing about 4000 quarts daily. We are considering buying a new cooler for pasteurized milk and are undecided whether to get a plate or surface type. Any information that you can give us on these machines will be appreciated.
R. A. B., Illinois

ANSWER–There are several factors that you should consider before making up your mind which type of cooler you should buy. Some of these are the price you are willing to pay, the type of cooling medium you have available (brine or sweet water), possibilities for expansion of business, and, in line with this latter, whether or not you may some time wish to convert to high-temperature, short-time pasteurization.

Let us examine each of these considerations.

The cost of a plate cooler is considerably above the cost of the surface cooler, especially if the surface cooler is built with electro-tinned copper tubes. You can expect to pay about $1,000 more for the plate equipment. At your present capacity a surface cooler will handle your cooling job adequately and will be less expensive both in first cost and in time required for daily cleaning. A well tinned copper cooler will last for many years if properly used. Clean it with a good alkaline cleaner and a brush; never use steel wool.

The type of cooling medium is important because of the tendency of brine to pit stainless steel. All plate coolers and some surface coolers are constructed of stainless steel and brine should not be used in them unless it can be carefully neutralized and flushed from the cooler plates and tubes after each use. Copper is attacked but little by brine and therefore a tinned copper cooler is to be recommended where brine is used. If refrigerated sweet water is available, either stainless steel or tinned copper coolers can be used.

At your present volume and even with an increase of 1000 quarts per day, the ordinary surface cooler will adequately handle your cooling job. However, if you see possibilities of expansion beyond this, the plate cooler has definite advantages in that its capacity is easily increased by adding more plates and it can be converted to a high-temperature, short-time pasteurizer if desired. Most plants with volumes below 5000 quarts per day cannot economically adopt high-temperature, short-time pasteurization, but it is a definite possibility in your case if your volume can be expanded sufficiently.

We trust that this discussion may prove helpful to you.

Boiled Water and Pasteurized Milk

QUESTION — I need material on pasteurization for an article and would appreciate pamphlets on pasteurization of milk and undulant fever (Bangs disease).

Also, would you be kind enough to answer this question? Does pasteurization of milk (144 to 149 degrees Fahrenheit) kill the undulant fever germs, when the boiling (212 Fahrenheit) of liquid is required to kill harmful bacteria?
L. M., New York

ANSWER — The organism causing undulant fever in man, *Brucella abortus,* is readily killed by the time and temperature of pasteurization. In New York State the law requires that every particle of milk be held for a continuous period of not less than 30 minutes at a temperature of not less than 143°F. or it may be held at 160°F. for a period of not less than 15 seconds.

Either of these treatments will kill not only undulant fever organisms but the other milk-borne diseases, including the most hardy pathogen found in milk, *Mycobacterium tuberculosis.* As a matter of fact, the heat treatments used are based on the work of North and Park, in 1927, who used the disease-producing T.B. organism in their work.

The disease-producing organisms found in water are, in general, as easily killed as are those in milk, and pasteurized water would be as safe to drink as milk. Most directions, calling for the boiling of unpalatable waters before drinking, are based on a knowledge that it is better to overtreat water than undertreat it. If water treatment could be done under the carefully controlled conditions which exist in milk pasteurizing plants, the processed material would be safe after pasteurizing. However, some waters might contain poisons produced by bacteria and which are destroyed by boiling. These are not found in milk. Also, conditions which force people to boil water, such as flood contamination, etc., usually remove the technical equipment too so that crude conditions prevail. Any one can tell when water has reached the boiling point; it is difficult to tell without thermometers, etc., when it has reached

143°F. or 160°F. Unless conditions are good, we will still recommend boiling water, but recommend pasteurizing milk where skilled operators can do it under controlled conditions in approved apparatus. Boiling milk ruins its fine flavor and it is safe after pasteurization. Boiling water may make it taste a little flat, but under the worst conditions, the boiler will know it is safe.

GENUINE COURTESY MELTS SALES RESISTANCE

By **FRANK W. GRAY**

COURTESY IS A PRIME requirement of the selling personality. A great deal that passes for courtesy is merely automatic and superficial. It comes from the lips, not from the heart. Consider, for instance, our conversational courtesies expressed in such remarks as: "How are you?" or "How's the family?" neither of which questions is supposed to be answered in greater detail than "Fine," or "Okay."

We also have a variety of correspondence courtesies—such hackneyed phrases as "Dear Sir: We have at hand yours of the tenth and beg to advise. . ." or "Gentlemen: Your letter of the tenth has been received and contents noted." The conventional greetings, pleasantries, and adieus which we use every day are so impersonal that they say nothing, mean nothing, give nothing.

Genuine courtesy goes deeper than this. It involves listening carefully while the other fellow is talking, showing some deference for his opinions (whether we agree with him or not), and expressing a warm and sincere interest in his welfare. It means appearing attentive when we are bored, and being considerate of people whether or not they can be of use to us.

No one cares to listen to the other fellow's troubles, but when we listen – *really listen* – we learn things which bring us closer to him from that time on. The clever salesman takes advantage of such opportunities to get on the human side. He remembers details and makes it a point to ask about them in future conversations. In this way he shows himself to be interested not only in the man's patronage, but in the man.

One of the ways in which personal relations are often undermined is in thoughtless criticisms. It is easy to criticise, particularly when talking about subjects on which our knowledge is incomplete. It is not so easy to offer constructive and workable suggestions. Criticism is both destructive and negative. The salesman's approach must always be positive—he must be a builder, not a destroyer.

Men may offend others by the way in which they offer opinions. Dogmatic statements are never convincing. The wise man tempers his opinions by mentioning the source of his information. Better yet, he puts them in the form of questions rather than declarations. The opening "*I* think. . ." invites skepticism, but the opening "Don't *you* think. . ." compliments the listener.

Courtesy is a builder of good personal relations and good personal relations in business go a long way toward taking the effort out of selling.

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ADVANCED EQUIPMENT

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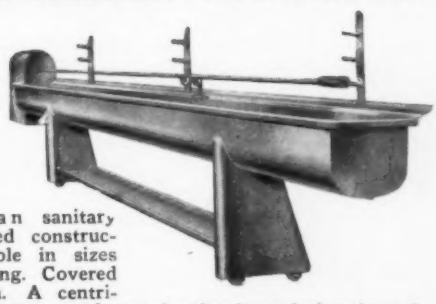
STOELTING "FILTRITE" COLD MILK FILTER

"Filtrite" provides high - efficiency double filtering. Every drop of milk passes through two separate filter bags assuring a clean sediment-free product under completely enclosed conditions while filtering. The telescoping filter bag frames and the bags can easily be removed and replaced. One single rubber gasket seals the entire unit. Especially designed for volume production. Cannot be overloaded and requires no limit switches. "Filtrite" has no equal for low initial cost and dependable cold milk filtering.

STOELTING SANITARY PIPE WASHER



This new streamlined attractively designed washer will save hours of cleaning time in your plant and assure you of thoroughly clean sanitary pipes. All-welded construction and available in sizes from 6′ to 12′ long. Covered drive mechanism. A centrifugal water pressure pump forces the cleaning solution through the pipes and, in combination with the brush, effectively removes all residue, fats and milkstone, leaving a clean bacteria-free surface. Wood roller pipe rest protects the sanitary pipes from damage.

Write For Descriptive Literature

STOELTING BROTHERS CO.

Manufacturing Engineers for the Dairy Industries

KIEL • WISCONSIN

Effective Pest Prevention Means

Insects and Rodents Must be Stopped Before they Start

DR. E. M. SEARLS

When we asked "Ed" Searls for his picture he remarked that he failed to see how his picture could be used to advantage as an illustration for a story on insect and rodent prevention. The answer is that for a couple of dozen years he has been studying the pestiferous little creatures until he knows more about them than they know themselves. Bugs have been known to vanish and mice to curl up and die merely by sampling his stationery.

On a less legendary plane Dr. E. M. Searls is an entomologist for the National Dairy Products Corporation. Over a domain that reaches from New Zealand to Switzerland and from Brazil to Canada he wages unremitting war against insects and rodents. He is an alumnus of Wisconsin's great State University where he taught before the war. He was with the 6th Service Command during the recent conflict and added the Axis partners to his already well filled roster of pests to be eradicated.

In this article he points out that the best way to control insect and rodent pests is not to have any.

Don't Let Them In, Clean Up Close Up

INSECT AND RODENT prevention in food processing plants has assumed an entirely new significance in recent years. Insects and rodents used to be considered somewhat indulgently. It seemed that they were always present. We knew they did some damage. This was particularly true of the rodents, and some efforts were made to dispose of them because the damage they did was obvious. The damage that insects did was not so obvious. Insects never ate enough processed food to cause any significant loss, so we trapped rodents in our spare time and more or less accepted insects as something sent to us as a special trial,— something which, like the common cold, we had to accept.

It is still true that insects seldom do much actual damage around a food processing plant. It is equally true that rodents seldom consume any great quantity of supplies or destroy any great quantity of goods before they are discovered and destroyed. But the attitude toward these pests has changed. Today, the prevention of insects and rodents is a MUST. This is principally because insects and rodents are not thought of so much just as insects and rodents. Now they are considered essentially as indices of sanitation. The alert plant manager or superintendent today recognizes that a few insects in his plant or even some evidence of rodents long departed is sufficient to indicate that conditions in his plant are not what they should be.

There are many reasons why this is true. Probably the most outstanding reason may be the result of the near-miracle insecticides which have been developed in recent years. These chemicals which have been so much more potent than we have ever known before, have taught plant managers, quality control men, and the state, city and federal inspectors that it isn't necessary to have large numbers of insects in a food processing plant. In fact, most of these people have become quite critical of just a few insects. This too can be traced to the effectiveness of the newer insecticides. Previously, many insects might have gone unnoticed. Today a few are too many. Previously, quality of food products, particularly dairy products, was a rather loosely used term. Today quality includes a number of factors, many of them quite unnoticed by the food processor of a few years ago. Quality today means not only the general nature and amount of the materials which might go into a food product, but also the conditions under which the food is processed, the exact nature of the materials from which the foods are made, the origin of these materials and the physical condition of all the apparatus and the building where the foods are processed. It seems to be absolutely true that of all these factors, there is no more reliable index of desir-

XUM

Skids shown at right do not furnish hiding places for insects and rodents. They are preferred over dunnage shown at left. Skids also simplify the cleaning problem.

Doors that are constantly closed prevent rodents from entering plants. Odors from milk and dairy products plant are extremely enticing to these pests. They'll risk a lot to get in.

Where walls must be pierced to permit the passage of pipes or ducts a good clean seal eliminates the ragged edges that are considered prime residential areas by insects.

able conditions than the absence of insects and rodents and all evidence of them.

The newer insecticides have not lessened the task of the plant manger or plant superintendent in all respects. Added emphasis has been placed on the necessity of keeping plants free from insects. This has even made the task of the plant personnel more exacting. We used to use space sprays. They were the best we had. Space sprays, inefficient as they were, could reduce insects only to a certain point. Beyond that there had to be tolerance. Today the combination of tightly closed plants with efficient, effective, economical, long-lasting, residual-type sprays has raised the requirements to a point which far exceeds anything we have known before. We have not reached complete prevention. It is doubtful if we ever do. Some degree of tolerance may be necessary even under the best conditions.

It is still true that we have near-miracle insecticides. Questions have been raised concerning some of them in recent years. We are told that some of them, on which we depended heavily, may have in some cases lost their great efficiency. We are told that in certain instances flies have become resistant to some of our best residual sprays. In one way this is dismaying. It had been most reassuring to know that DDT, for instance, could be depended upon to kill flies generally. Perhaps this was a misleading reassurance. Perhaps we shouldn't have relied so heavily on chemicals to do the work which we should have done. Just now it would appear that we have let some of the long-established customs of sound dairying slip because of the security that we felt in using DDT. Perhaps there are windows left open and unscreened and self-closing devices may be gone from some doors. All sorts of pests get in that way.

There are certain practices which are absolutely fundamental in sound dairying. For instance, it would not be practical to allow equipment to go uncleaned, even if we had sanitizers which would completely sterilize the equipment. Sooner or later foreign tastes and odors would appear in food products. In other words, it would never be satisfactory to "pickle" the extraneous material in a dairy plant. Similarly it would never be desirable, even if we had the perfect insecticide, to try to kill all the insects which might enter a dairy plant through open windows or doors. It is a number one consideration that we do not want dead insects in a food processing plant. In order of their importance, the basic procedures in satisfactory insect and rodent prevention in a dairy or other food processing plant would be about as follows:

1. Clean up.
2. Close up.
3. Use insecticides and traps.

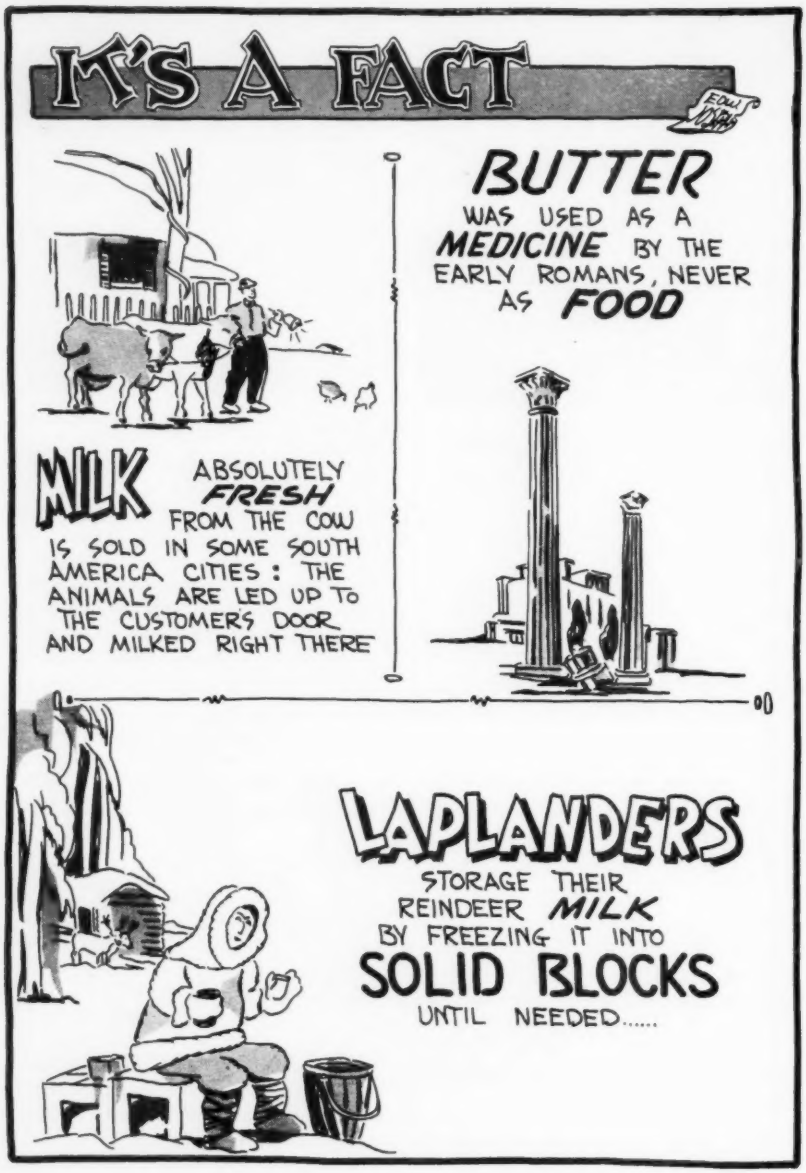
Clean Up

"Clean up" is easily understood but less easily practiced around a food plant. It isn't a simple thing. It doesn't mean Just to wash the floors, sweep the loading dock or turn the hose on the walls occasionally. It means rather that all the places around the plant, as well as in the plant where pests might go to breed or hide, must be removed or corrected. A broken bin bottle which is emptied only once a week may in summer produce more flies than any insecticide could kill in the plant. Cracks in the walls, floors and ceiling could provide hiding places for insects in which no insecticide would be effective. Equipment in poor condition, cracked or broken, can furnish similar hiding places. A plant superintendent, to be successful, must be alert, indeed, to note these conditions and correct them. Obsolete or unused equipment standing about in a plant not only takes up room and gets in the way, but it also serves as a hiding and breeding place for insects and rodents. Storerooms where materials and supplies are piled on the floor or on dunnage "hit or miss" can furnish enough insects or rodents to keep a plant infested despite the best efforts of the plant superintendent.

Close Up

"Close up" is also a complex idea. Obviously there must be doors and other openings into the plant if the plant is to be used. Conveyors for cases and cans have to pierce the walls. It is impossible to keep these closed at all times. In short, there must be an intelligent effort made to make it as difficult as possible for insects and rodents to enter through the functional openings into a dairy plant. There is no suggestion here that it is possible to keep out all the insects or rodents which may enter through these openings. These pests are much too mobile and agile to be excluded completely, but well-screened windows, doors with fast-acting self-closing devices, and conveyor openings which are equipped with flaps which close as soon as released, will hold insects and rodents to a very low point. The plant superintendent who depends upon insecticides, traps or rodenticides to compensate for his lack of industry in keeping these openings closed as much as possible, will find that his is a difficult task indeed.

It it doubtful that it will ever be possible to completely exclude insects and rodents from food plants. The odors of food processing are entirely too attractive. Cases returning from the wholesale routes and other objects used in com-



merce returning from the consumer will carry pests into the plant. For these we must resort to other means of control.

Use Residual Sprays

As far as the insects are concerned, there is no more satisfactory control method today than the use of an effective residual type insecticide. Space sprays usually lack residual action. Because they have to settle out of the atmosphere vertically downward, they also are too apt to contaminate vats, kettles, pasteurizers and other open equipment with foreign odors and tastes. Adulteration of product from this source may be avoided by the use of carefully selected sprayers and a residual type spray. There is considerable controversy over the identity of the most satisfactory residual spray today. It is claimed that flies and some other insects have become resistant to DDT and some other insecticides. This is probably true in some cases, but the actual DDT-resistant insects are not common in nature now. DDT-resistant flies are found only in widely scattered areas.

Today despite all the information that has been written to the contrary, it is questionable if there is any insecticide which is as safe, economical, effective and available for insect prevention in a dairy plant as the 5% kerosene solution of DDT now in general use. It has many attributes which we find desirable for our purpose. It is possible that other insecticides may be found later which will be more useful than DDT. Researchers in the federal services, among the great chemical supply houses and elsewhere are earnestly trying to find insecticides better than DDT. When such an insecticide has been found and demonstrated, it will find ready use, but until then there seems to be no good reason why we should not continue with the stable DDT.

An AMR Exclusive

Traps

The program of "clean up" and "close up" applies to the rodents as well as to the insects. Rats and mice will not linger long about a plant where there is no available food. They will not care to stay long within a plant where there are no hiding places. Well-screened windows and well-fitted doors with fast-closing devices discourage rodents as well as insects. Rodents also have to have havens in which to hide and breed before they will make themselves at home.

There is no rodenticide which is as effective for rats and mice as is DDT for the insects. Even if there were, I doubt if we would care to use it. Certainly no one would want poisoned rats or mice dead or decaying in a food plant. The odor of decaying rodents as well as the many hairs released from their bodies will float in the atmosphere and possibly find their way into products where they are most unwelcome. "Clean up" within the plant means that no rodent could live long in the plant without its presence being detected. When a rodent is detected in a dairy plant a trapping program should be started. Rats or mice caught in a trap and destroyed cannot leave odors or hairs about the plant. A systematized trapping program using either baited or unbaited traps has been found entirely effective wherever it has been used faithfully. The big rat-sized claptraps and the Kness Katch-All mouse traps will eliminate both rats and mice from a dairy plant quickly and efficiently.

A thorough program of "clean up" and "close up" supplemented by a systematized trapping program and by carefully selected and carefully applied insecticides will prevent rodents and insects from being problems in food processing plants.

TO STUDY HEALTH RULES

A. C. Dahlberg to Head Investigation of Effect Health Regulations Have on Quality of Product

Health regulations and their effect on milk quality, through all stages from cow to consumer, will soon be studied from coast to coast.

The National Research Council, administrator of the project which is financed by The Research and Marketing Act of 1946, has chosen Prof. A. C. Dahlberg of the dairy industry department at Cornell University to direct the investigation. He will be aided by Harold Adams of the Minnesota State Department of Health.

"There is now a multiplicity of rules and regulations pertaining to the production, processing, and distribution of milk that has been publicly discussed for many years," stated Professor Dahlberg. "These regulations have developed naturally throughout the years as circumstances required. Years ago milk-borne disease epidemics were too frequent and local health and regulatory officials made rules governing the local milk industry to cope with their individual disease problems. Now that the regulations have assisted the industry to make milk a wholesome, pure food, the problem naturally arises as to the importance of some of the regulations and the possibility of developing greater simplicity and uniformity in them. If these various regulations are excessive then they may be needlessly expensive to milk producers, thus increasing the cost of milk to consumers."

Will Take Two Years

The research project is planned for a two-year period, Dr. Dahlberg said. During the first year a general survey will be made to determine the regulations in effect in city milk inspection throughout the United States and their relation to milk quality. Then selected areas will be studied intensively to determine the details of milk inspection and milk quality. Experienced analysts will be selected to determine the actual quality of the milk so that none of the data will be obtained from existing reports.

This study is planned to learn the facts, Dr. Dahlberg pointed out, and to show which regulations have been particularly important in the marked improvement in milk quality during the past few decades. "It may be that only a limited number of the regulations have been especially significant and helpful to the milk industry in supplying the consumers with pure wholesome milk. In any event the facts should be determined and the information should be of immediate value. Certainly, such agencies as state boards of health, the state departments of agriculture, and the United States Public Health Service which already have been giving consideration to a unification of milk regulations should be particularly interested in this study."

●

MAY SELL THE SPANISH MAIN

A study of present and potential markets for United States dairy products in the Caribbean area is being undertaken by the Office of Foreign Agricultural Relations under the Research and Marketing Act program, U. S. Department of Agriculture.

George H. Day, marketing specialist, will leave in early February for a 2½ month study in Cuba, Dutch West Indies, Venezuela, Colombia, Panama, Costa Rica and Mexico. He also may go to Honduras, El Salvador and Guatemala. A similar survey, to cover most of the countries of South America, is planned later. The countries to be visited are generally deficient in milk and dairy products. But because they make large shipments of coffee, bananas and other tropical products to the United States, they have available dollars with which to purchase United States dairy products.

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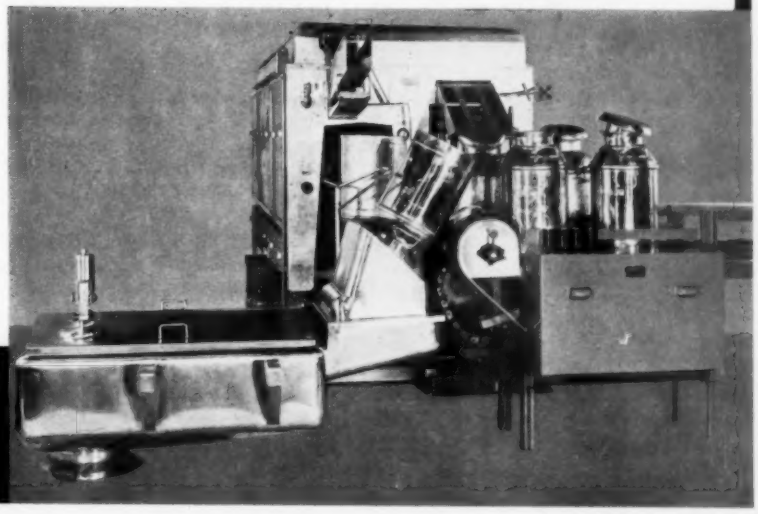

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POTSDAM, NEW YORK

Buildings & Budgets

By **FRED DEGENHARDT**

If Fred Degenhardt develops a split personality it will be because he has been forced to know more about two businesses than most folks know about one. As a specialist in the design, construction, and maintenance of dairy plants he has combined the practical problems of the drawing board and the pasteurizing vat into an astute appreciation of what it takes to create a milk plant. Seven years with the Engineering and Planning Department of Bordens plus four years with Sheffield Farms have given his twenty-one years as an architect a decided dairy flavor. Last July he opened his own office at 31 Union Square West in New York where he concentrates on but does not limit himself to dairy work. His column will appear in the American Milk Review every other month. He will be glad to discuss your maintenance and construction problems on these pages. Address your questions to him at his office.

QUESTION — A few years ago we lined the walls of one of our Milk Receiving Depots with a tile that measures 5″ x 12″ and about 2″ thick. The face of the tile is now peeling off leaving a very unsightly and unsanitary surface. We examined the tile carefully and found a number of very fine surface cracks. Can you tell us the cause of this peeling?

ANSWER — From your description of the material it is a Salt-Glazed Structural Facing Tile which, according to the specifications of the Facing Tile Institute, an affiliate of the Structural Clay Products Institute of Washington, D. C., does *not* have to pass the standard tests of the above Institute or the American Society for Testing Materials for Imperviousness, Chemical Resistance of Finish, Resistance to Crazing and Absorbtion. This material is not recommended by the manufacturers for use on the exterior of buildings and in the writer's opinion the interior materials of a Milk Receiving Depot must withstand more severe conditions for 365 days of the year than those of the exterior.

In locations, such as yours, where the temperature is very frequently below freezing it is not uncommon for this material to spall, particularly on the inside face of the exterior walls and at window, door and conveyor openings. These areas are more subject to frost action than others on the interior of the building. During the receiving and clean-up period when there is a great amount of moisture in the room, condensation formed on walls, windows, etc., is absorbed into the softer body of the tile through the tiny cracks or crazing and through the joints. This moisture remains in the tile after the daily operation has been completed and cannot dry because of the usual procedure of reducing the heat at this time or, as in some cases, turning off all heat and draining the piping system. Thus, as the outside temperature drops, the heat which the wall retained from the operation is slowly dissapated and the moisture remaining in the tile freezes, causing the surface to spall off.

Clear Glazed tile, which is available through most of the manufacturers in the same sizes and shapes as Salt-Glazed is recommended for use where exposure to frost action is the use specified by the purchaser. In order to comply with the standard specifications of the Institute mentioned in the first paragraph this material must pass the tests for Imperviousness, Chemical Resistance of Finish, Resistance to Crazing and Absorbtion, and will, therefore, better withstand the conditions in a Milk plant.

QUESTION — We intend to replace most of the wood doors in our plant with metal covered wood doors. During visits to other plants we have noticed, on some doors, that metal mouldings are missing, loose or rusted, the panels show signs of rust and the screws of the door closers and hinges have pulled out. Before we order new doors we would like your advice on the type best suited for our purpose.

ANSWER — There is a metal covered wood or kalamein door made expressly for Dairy plants and similar "'wet" industries. It is a flush type door in which the wood core is completely sealed within the metal covering. There are no panels or unsanitary mouldings to rust or become loose and water cannot reach the wood core, thus preventing rot. Door closers and hinges are attached with tap screws and cannot pull out. Provision is made during manufacture for installing lock sets and knob spindles without exposing the wood core to moisture.

The door is 1¾″ thick with a two-ply laminated wood core, the laminations providing for expansion. This core is reinforced on the sides, top and bottom

with wood strips running the full width and height forming a frame for rigidity. A covering of No. 24 gauge galvanized steel is glued to the core and then put under pressure until the glue is set. The great pressure applied insures adhesion of wood to metal and avoids buckles and waves on the faces of the door. All seams of the covering are made on the sides, top and bottom and none on the faces. Side seams are let into the core reinforcing strips, soldered, and ground smooth. Top and bottom seams are lock-jointed, recessed into the wood, soldered and ground to a smooth finish. For attaching hardware, metal plates are recessed in and bolted to the wood core at door closer and hinge locations before the metal covering is applied. Where lock sets and knob spindles are to be installed either metal boxes or tubes, depending on type of hardware, are built in and soldered to the covering thereby retaining the water tight qualities of the door. The built-in plates are drilled and tapped to permit the use of tap screws for attaching hardware rather than screws in to the wood core or through-bolts which require drilling completely through the metal covering and wood core. Although one thickness of the covering is necessarily punctured by the tap screws, if mastic, litharge or pipe joint compound is used when setting them there is a very slight chance of water seeping through the threaded joints.

A door of this type properly painted on both faces, edges and especially top and bottom will give you many years of service at a low maintenance cost.

I wish to point out at this time that most State and Municipal authorities having jurisdiction require that certain doors, such as those opening into stair halls, horizontal exits, etc., bear the label of the Underwriters Laboratories. The door described above will not meet their requirements without some changes and additions to the specifications, such as a metal strip between the laminated core and wood reinforcing strips, a 1/16" sheet of asbestos insulation glued on one side of the door between the core and the metal covering and unsoldered top and bottom seams. However, inasmuch as you state that you are going to replace *wood* doors you apparently will not require any with Underwriters' labels.

The Standard Flush door is similar to the Dairy door but for installation of hardware it is necessary to puncture the metal covering and expose the wood core and the back of the metal covering to moisture which will eventually cause rotting and rusting.

The Panel door is a perfectly good door for use in the office section and dry storage rooms in your plant. It is not recommended for wet areas because the seams of the metal in the recess into which the panels are set are not soldered and the four edges of the panels are not metal covered, water can reach the core and back of the metal covering and cause trouble.

NEW TRI-STATE QUARTERS

Plans are underway for a new building to house the creamery of Tri-State Co-Op Association, Montgomery, Mich., general manager C. F. Palmer announced Jan. 4. Plans and specifications are now on the architect's board for the new unit which will be approximately 88 by 120 feet, made of brick and tile, with concrete floor and roof. A well has already been driven on the site.

The present creamery building, constructed in 1917, will be used for storage when the new structure is completed. The main office in the old unit will remain in operation, with a subsidiary in the new building.

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A Massachusetts Economist Says,

Don't Let Location Differentials Wag the Marketing Dog

By **A. A. BROWN**, *University of Massachusetts*

AMONG THE ELEMENTS being incorporated into Federal Orders proposed for the Springfield and Worcester, Massachusetts markets is the misunderstood and ill-advised "Location Differential". The argument that the Boston Order has it and therefore markets with contiguous supply areas must also have it is open to question. The arguments for its inclusion into the original Boston Order or Marketing Agreements are hazy and infirm. One highly respected handler, whose memoirs ought to be written, recalled that in 1938, Mr. ....., also a man of note, stood up in a meeting and proclaimed that unless the location difference were granted to Massachusetts producers, they would fight the order. Since these shippers accounted for only four to five percent of the Boston supply, the "practical" response was to say O.K. And so the differential became a part of the Order.

Some time later a need was felt and an interest expressed in the price paid by milk handlers to Massacuhsetts dairymen compared with the prices paid dairymen in northern New England. I have not seen the statistics. I am sure they exist; probably in some hearing record. They show Massachusetts dairymen as receiving a premium. But the statistics need to be reviewed, especially since the use to which they are now being put with little question involves areas and numbers far beyond those in the minds of the earlier proponents. The transition from a prop to the minimum values in one area to the the pedestal of general respectability for a region is far too great to be made without a firm roadbed and a well lined-up track.

Assuming for the Boston market that prices received by Massachusetts dairymen were higher historically than those received by northern New England producers, then what? Does it necessarily follow that every item of formulae in contiguous areas must be similar? If a device in one formula is open to question, will it be extended automatically? If there were errors in judgment, if not in fact, must those errors, incorporated in a predecessor, be extended to all following? *That sequence and inevitability are the great dangers of administrative pricing. Errors beget errors.*

Al Brown has been a keen student of milk marketing in New England ever since he forsook apple trees for milk cans back in 1933. Because he is willing to depart occasionally from the orthodox his observations have more than passing value. What he has to say about location differentials should furnish valuable nourishment for industry thinking. Says he "From the government one should expect simplicity or at least simplification." We'll buy that one.

There Are Many Angles

The location premium is not one to consider lightly. Economically and politically it is a weighty item. Location differentials are net gains only in the short run. Sooner or later they become a part of the capitalized value of land. Once this has occurred the need for a differential becomes permanent and the argument changes. It now reads that higher costs require a premium.

Premiums to dairymen in nearby areas were paid, so the argument goes, for having more uniform supplies, i.e. less seasonality. Here again statistics bear out the assertion. But again further examination is desirable. For example, even production needs to be viewed in the light of market structure. To what extent during the past 40 years did the regular supplies shipped to Boston from Massachusetts dairy farms influence the operations of all handlers? Operations of certain handlers were probably such that premiums for even supplies may have been dictated by savings elsewhere – plant operations; cost of supplemental supplies, etc. So far as the bulk of the markets needs was concerned, however, operations were such that even supplies was not a major item.

In markets other than Boston, for example Worcester and Springfield, one also needs to consider structure. Here again extreme differences exist in seasonality. And again certain handlers comb the area for "good" producers. The inducements to potential suppliers were many; good pay, low trucking charges, honest weight and test, etc. But the most tempting lure was and has been a low surplus. Some handlers have had a policy of keeping their supplies in line with Class I sales so as to be able to pay a high blend price. Payment of such a price enables controls over supplies – quality as well as volume. Managerial discretion in the absence of Federal orders, sets the framework in metropolitan markets for price variability. The differences in prices paid to dairymen are only incidentally a function of location. The procurement operation of major handlers covers the milkshed and the differences to dairymen are the consequences of different outlets.

Peter Must Pay Paul

That "Location Differentials", at least as devised for Springfield and Worcester, are of uncertain value is also apparent from the accounting legerdemain by which they are paid. According to the proposal the first charge against the pool is the deduction for the location differential. Since the pool is composed of money due all dairymen, those in the group who are to receive the differential are also charged for it. In the extereme it would permit a pool composed of none but residents within the preferred boundaries to operate a location-differential scheme. To the ex-

tent that the recipient enjoyed transferring money from one pocket to the other, it might be acceptable.

Adherents of the principle of location differential in their concern for correct accounting and in their eagerness for devices which will appeal have submerged, overlooked, or ignored the basic logic of such an arrangement, namely that those on the outside pay a tribute to those on the inside for privileges received. Some observers might prefer to say that those beyond the margin line should expect to pay the penalty. But tribute of this sort, if the accounting procedure follows the basic premise, can only be exacted *when the "outside" is large enough to submit painlessly.* This condition, of course, exists neither in Springfield or Worcester.

Some regard should also be shown for what might be described as "good public policy". Whether one chooses to draw on the fervent appeal of "freedom of trade" as a contribution to our high levels of living or whether one chooses to use the sober logic of keeping trade barriers at a minimum is perhaps incidental. If history reveals nothing else, the record of restrictions in the movement of people and property is one which ought to be recognized for what it is. And there is no doubt that location differentials are set up more often as deterrents than as inducements.

Finally, one cannot consider location differentials without seeing the shadow of doubt cast on government aid to agriculture. Presumably at the time industry feels the need for public assistance in untangling its affairs, government is looked upon as a means of cleaning house. The cumbersome accumulation of little deals, the delaying trade barnacles, the creaking machinery of imperfect competitive processes culminates in a situation calling for major attention. From government, one should expect simplicity or at least simplification; one should expect a chopping away of the matted entanglement of business arrangements into which competition sometimes leads; one should expect not a freezing of the errors or injustices of the past but a steady release from their costly hold. Over the years farmers have been well aware of the stickiness in the costs of goods and services they buy. Stickiness can also develop in the composition of the price of the things they sell. Stickiness is not a healthy characteristic. Once a feature like location differentials becomes a part of the price picture, it can be eliminated if at all only with great effort and cost. The course of wisdom is to at least try getting along without them at the outset.

BATTLE CREEK BULLETIN

The Woodland Dairy, Battle Creek, Mich., which had absorbed three other milk companies, the Hill, Logan, and Lakeview dairies, since its opening in 1938, has been purchased by Sullivan Milk Products, also of Battle Creek. Ralph A. Sullivan is the owner of expanding concern.

Charles Karlovski, former Woodland owner, is retiring from business for reasons of health, and has no immediate plans for the future.

Sullivan Milk Products has been in business under that name since 1927, and prior to that time was known as the Milk Producers Company. It was purchased by Frederick W. Sullivan, father of the present owner, in 1907.

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Let's Talk Accounting

By JIM KLUGER

QUESTION NO. 1 — In our area we charge wholesale customers a five cent bottle deposit. How can we account for our deposits liability and the cost to us of wholesale bottles used?

ANSWER NO.1—Keep a daily record for each route's wholesale bottles "out" and bottles "in". Such a record may best be maintained on either daily wholesale loading sheets or daily wholesale sales tickets. Bottles "out" will be deliveries to wholesale stops and bottles "in" will be empties picked up at the stops. The daily charge to the stop will be the charge for products delivered plus the bottle deposits minus the credit for returned bottles. Each wholesale customer's account, therefore, will carry the full charge for merchandise and deposits on unreturned bottles. At the close of each month the recap of wholesale routes will show (1) total charges to customers (being made up of merchandise charges, plus bottle deposit charges, minus credits for returned bottles (2) total bottles out and (3) total bottles in. Any charges or credits for other reasons, of course, will be included too, but will not alter the procedure outlined for bottle deposits accounting.

For bookkeeping purposes, the sales entry at month's end will be

Debit Wholesale Accounts Receivable (total charges to customers)

Debit Bottle Deposits (bottles in, @ 5c each)

Credit Wholesale Sales

Credit Bottles Deposits (bottles out, @ 5c each)

Jim Kluger, specialist in dairy accounting, conducts his exclusive column in the "American Milk Review" each month. If you have an accounting problem or simply an accounting question write to Mr. Kluger at Kapleau, Kluger & Company, 1414 South Penn Square, Philadelphia, Pa. He'll do his best to give you the straight dope.

The *credit wholesale sales* figure may be the arithmetic difference between the two debits and the *credit bottle deposits* figure. Or, if the sales summary charges to wholesale customers are broken down between charges for merchandise delivered and charges for bottles, the *credit wholesale sales* figure will be the total charges for merchandise delivered only. The balance in the "Bottle Deposits" account should be always a credit balance and it will represent your liability for deposits on bottles outstanding. To start off, you will have to estimate the present supply of unredeemed bottles outstanding, debit "wholesale bottle inventory" at five cents each, and credit "bottle deposits" for the same amount.

Debit purchases of new wholesale bottles to "Wholesale Bottle Inventory" as purchased. At the end of each month credit (at cost) "Wholesale Bottle Inventory" with (1) the difference in new tory account on the books and the actual physical count of new wholesale bottles on hand and (2) debit or credit "Wholesale Bottle Inventory" with the increase or decrease respectively in the "Bottle Deposits" account. The net balance in entries (1) and (2) will normally be a debit, and will be debited to "Wholesale Bottles Expense" and will represent your cost of wholesale bottles used for the month.

The procedure outlined will automatically set up as expense the difference between cost of new bottles and the five cent deposit charge as new bottles are put into use. Thus, the total "Wholesale Bottle Inventory" is carried at cost for new bottles and at five cents each for used bottles in customers' hands. Used bottles in the plant and in process will have been automatically charged to expense, as is the conservative practice. If you desire, although it is not recommended, you may value bottles in process also at five cents each by debiting "Wholesale Bottle Inventory" and crediting "Wholesale Bottles Expense" at the month's end with the estimated used bottles on hand and in process, to start off, and adjusting the inventory through expense for any subsequent changes in your estimate.

QUESTION NO. 2 — Can you recommend depreciation rates to be used for dairy plant equipment, trucks, buildings, etc.

ANSWER NO. 2—The following depreciation rates, using the straight line

method, are considered to be applicable in most instances:

Type of Equipment	Estimated Life in Years	Annual Rate
Auto trucks	4 to 8	25% to 12½%
Horses and Harness	7	14¼%
Ice Cream Cabinets	10	10 %
Fluid Milk and Ice Cream Equipment	15	6⅔%
Pasteurizing and Bottling Equipment	15	6⅔%
Receiving Station Equipment	15	6⅔%
Milk Cans and Bottle cases	4	25 %
Cheese Processing Equipment	14	7 %
Condensing Equipment	20	5 %
Buildings	33 to 50	3 to 2 %

These rates are applicable to new equipment and are to be applied after deducting salvage or scrap value from cost of new equipment. You must bear in mind that actual depreciation will never be the same for any two dealers. The type of business done, building construction, size and location of operations, extent of routes, care and maintenance given equipment, brand of equipment, etc., are all factors which will influence the actual rate of depreciation. The above rates are composite rates for some different departments in the industry and are generally as approved by the Bureau of Internal Revenue for income taxation. Although a rate is given for cans and cases, it is better to inventory these items at the beginning and end of a period to determine the actual charge to expense.

SUPPLEMENTING FROZEN CREAM

(Continued from Page 28)

to the storage cost. There would be additional hauling cost to and from the cold storage and labor involved in thawing the frozen cream. Inasmuch as the homogenizer would probably be used during the day for milk the only additional cost in this connection would be the power consumption.

All of these costs would have to be calculated in the light of local conditions. It would seem probable that the total cost would be less than the difference in price between spring and fall cream. If a milk dealer has sub-zero refrigeration available the largest cost item — cold storage — will be partially eliminated.

Summary

A satisfactory bottled cream can be produced by blending stored frozen cream with fresh cream in equal quantities. This product is equally satisfactory for whipping or coffee cream.

Extra cream produced during the flush season may be stored and used during the short season.

Cream to be frozen and stored must be of first class quality.

Pasteurization before storage should be 165°F. for 15 minutes or 185°F. for 5 minutes. Cream should be frozen as quickly as possible after processing.

At the time of blending, the product must be homogenized at 100 lbs. per square inch pressure and at a temperature of at least 140°F.

The cost of handling and storing frozen cream will probably not exceed $.04 per quart.

This process will enable the milk dealer to dispose of at least part of the cream during the surplus season and make available more cream for the bottled trade during the short season.

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H. V. Atherton, Research Assistant, Department of Animal and Dairy Husbandry, University of Vermont, Burlington, Vermont.
Research conducted as partial fulfillment for Master of Science Degree at the University of Vermont.

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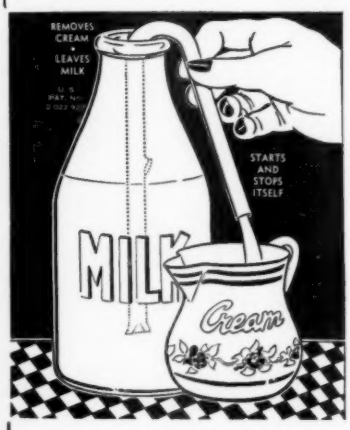

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Footnotes for Fieldmen

Bill Bryant, a fieldman's fieldman, explains the use of a filter disc as an indication of quality milk to an interested producer.

NEW SPRAYS FOR CATTLE

USDA Recommends Insecticides for Control of Insect Pests of Livestock

New insecticides, toxaphene and lindane, were recommended today by entomologists of the U. S. Department of Agriculture for the control of several of the most serious of the insect parasites of livestock.

Toxaphene is now recommended for the control of ticks, lice, hornflies, and sheep ticks on all livestock except dairy cows. This material is of special value in the control of ticks. For controlling ticks, and lice on cattle and swine, sprays containing .5 percent toxaphene should be used. Lice on sheep and goats and the sheep tick can be controlled with dips containing as little as 0.1 percent toxaphene.

Hornflies are controlled nearly as well with sprays containing toxaphene as those containing DDT. When used as a 0.5 percent spray at the rate of about 2 quarts per mature cow, the period of protection afforded by toxaphene is about three weeks.

Toxaphene for Ticks

Ticks of nearly all important species can be controlled with toxaphene sprays. These parasites are among the most difficult to control of all livestock pests. Toxaphene will protect animals from reinfestation by ticks for two to three weeks or longer.

One treatment of louse-infested animals with a spray containing toxaphene will often provide control of these insect parasites. The tail louse, however, requires additional treatments. Lice on goats were controlled with dips containing no more than 0.1 percent of toxaphene in several tests recently which involved the common biting and sucking louse species.

Complete control of sheep ticks have been obtained by use of toxaphene in dips containing 0.05 to 0.2 percent of the chemical. Good control of this parasite has also been obtained by use of sprays containing 0.5 percent of toxaphene thoroughly applied during warm weather to animals when the wool is only a few inches long.

Lindane Licks Lice

Lindane now is recommended also as a spray for the control of lice on dairy cows, and for the control of lice and ticks on other cattle. For louse control a concentration of 0.03 percent is recommended. Used alone lindane will not prevent reinfestations by certain species of ticks for periods longer than a week to ten days. When used at a concentration of 0.025 percent lindane in combination with 0.5 percent DDT, however, its period of protection can be lengthened to two or more weeks. Lindane as a dip containing 0.02 percent of the chemical will also control lice and sheep ticks on goats and sheep. Good control of sheep ticks can also be obtained when sprays containing 0.03 percent lindane are thoroughly applied during warm weather when wool on the sheep is short.

Lindane was recommended for use by the Department scientists for the first time last summer as a residual spray against flies in farm dairy barns and milk plants.

These chemicals always must be used carefully, the entomologists say. They caution livestock men to handle concentrates with care. They say concentrations recommended for insect control on livestock should not be exceeded.

●

WINTER MEANS EXTRA CARE

Your dairy cows may never go on strike, but they'll give less milk if you neglect them during the winter months, says Dr. M. E. Mansfield, University of Illinois veterinarian. Dr. Mansfield gives several good dairy management tips to help cows stay in top production no matter how bad the weather gets. The suggestions are:

Take good care of the cow's udder. If the udder becomes swollen and inflam-

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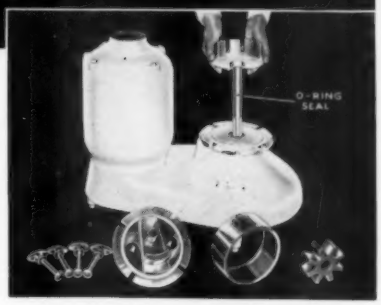

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ed, or if a teat becomes badly injured, call your veterinarian. Prompt treatment often helps to prevent mastitis.

Protect her against barnyard filth by keeping the lots clean and well drained.

Let her exercise, but don't make her stand outside for hours in bad weather or freezing temperatures.

Give her a balanced ration with enough good quality legume hay.

Provide clean bedding in light, well-ventilated quarters.

Finally, check her for lice, and treat her if necessary. Lice spread rapidly during cold weather, often cause unthriftiness.

●

WE'VE GOT TO BEAT THIS

Fluid Milk Consumption Fell Off in Past Year — Butter, Cheese Are Up

Per capita consumption of fluid milk and cream during the government's fiscal year ended June 30, 1949, showed a sharp drop from the previous year while butter and cheese registered gains, a report released by the U. S. Department of Agriculture recently reveals.

Fluid milk and cream consumption averaged 375 pounds compared with 390 in the fiscal year ended June 30, 1948, 395 for the fiscal year 1947, 436 for 1946, and a prewar (1935-39) average of 340 pounds.

Butter consumption for the fiscal year 1949 averaged 10.4 pounds compared to 10.2, 11.5 and 10.6 pounds, respectively, in the three preceding years, and a pre-war average of 16.7 pounds.

Cheese consumption in the fiscal year 1949 averaged 7.1 pounds while last year it was 6.8 pounds, in 1947 7.2 pounds and in 1946 6.2 pounds and pre-war 5.5 pounds.

Condensed and evaporated milk also dropped to 19.8 pounds per capita this year from 21.2 pounds last year. In 1947 it was an even 19 pounds, in 1946 17.8 pounds, while for the pre-war years it was 16.7.

Dried milk dropped sharply from last year's 3.7 pounds per capita to 3.2 pounds. However, it was still above the 3 pounds of 1947 although well below the 3.6 pounds of 1946. In the five pre-war years the average was an even 2 pounds.

Exports during the fiscal year consisted of 65,000 long tons (2200 pounds) of cheese, 186,000 tons of condensed and evaporated milk and 131,000 tons of dried milk.

Europe got 76,000 tons of condensed and evaporated, 62,000 tons of cheese and 79,000 tons of dried milk, while 49,000 tons of condensed and evaporated and 18,000 tons of dried milk went to the far east. Latin Republics got 28,000 tons of condensed and evaporated, 25,000 tons of dry milk and 1,000 tons of cheese. Scattered areas got the remainded of exports.

●

BATTING FOR A THOUSAND

Cows with ambition these days can hope for no greater honor than to produce 1000 pounds of butterfat in one year – and few are the cows that make the grade.

But Hazelwood Imperial Segis Mercedes, registered Holstein-Friesian cow owned by the State College of Washington, Pullman, Wash., set her heart on that 1000-pounds distinction – and made it, too, by the skin of her cool black nose.

She hit 1000 pounds right on the button—no more--no less. It was quite a strain but she stuck to it – and that last squirt did the trick!

And so she now holds the distinction of being the only cow to produce *exactly* 1000 pounds of butterfat in the history of the U. S. Holstein-Friesian breed—the 439th U. S. Holstein-Friesian to produce 1000 pounds of fat or more, and the 101st to produce this amount on 3 milkings daily.

The signature, C. B. A. "Bill" Bryant, is familiar to producers throughout the United States and particularly in the mid-west. As a fieldman's fieldman he is an ardent advocate of the dictum that quality begins on the farm. Through his work with farmers he has consistently bent his efforts toward a better milk. In this article he continues his long war on sediment.

COOL, CLEAN and COVERED

By C. B. A. "BILL" BRYANT

EARLY DURING 1949 one of our outstanding leaders, the director of Quality Control of one of our leading manufacturing milk companies remarked to me: "Bill, on our records we show little or no progress with our farm quality work. We have in percentages as many No. 3 and No. 4 sediment patrons, yet we have many, many more fieldmen than we had ten years ago."

I stopped to think. This momentarily jarred me. I answered, "Evidently statistically such is the case. FIRST, I believe this is probably so because we are taking sediment checks much more frequently, we know what is taking place better than we did. SECOND, we are keeping much better records, being conscious of their value. THIRD, what we used to consider a No. 2 sediment in our grading is now a No. 4." I went on further to say, "As I now review in my mind the observation of used mounted filter disks having filtered ten gallons of milk ten years ago with those having filtered the same quantity of milk more recently, I am impressed that those of today have upon them much less quantity of sediment and even a very definite different type of sediment." This further interested and challenged me. I said, "I will go home to our farm, where I have many mounted used filter disks and strips from trough strainers. These filter disks have been preserved from as far back as ten years by spraying with formaldehyde and covering with cellophane. Also I have many similar disks and strips of this year 1949. I will select 100 at random from different states for each period, and compare them." This I did and as I thought, I now know, for I have placed them in direct comparison. The mounted used filter disks and strips of 1949 had upon them, after filtering ten gallons of milk, 75% less extraneous matter than those of some years back. So very definite progress has been made in the mounted used filter disk or strip becoming the farmer's "Badge of Merit." Also the type of sediment was very noticeable in the comparison. Those of years back had upon them much more objectionable type of sediment than those of 1949. In most cases those of 1949 showed more dust-earth or sand, not so much mixed with that more undesirable type of extraneous matter. I have had mounted during my 21 year career with this subject, several thousand filter disks and strips taken from strainers on farms in every state of the nation, after filtering ten gallons of milk.

DON'T THINK, JUST MILK

We heard about a producer the other day who really has the indian sign on modern improvements. Milking machines may be all right for some folks but when milking time comes around after a hard day's work this farmer says they're too much bother. Give him a milk pail and warm flank for head rest and he can milk in comfort. He doesn't have to think, just sit there and milk. He uses an open pail and sits on the edge. He knows when the pail is full because he gets a damp sensation on the seat of his pants.

What he does with the milk we do not know. Frames it maybe.

The Farmer is Constant

I have frequently been asked which division of our Dairy Industry – Fluid, Evaporated, Cheese, Butter or Powdered – have farmers who, when mounting their used filter disks find the least extraneous matter upon them. My observations are that all farmers by natural inclinations are quite alike. The ratio of carelessness is quite the same, regardless of the use to which the milk from their farms is placed. All, when they first mount their used filter disk and let the foam run off or dry, see themselves what was their preparation for their milking. Those farmers who deliver milk to milk companies which have a consistent, well managed program that has good educational, helpful features for the producers, have much less sediment upon their used disks than those who deliver milk to firms who have no aggressive program. Many dairymen delivering milk to our fluid markets who have the finest equipment and cooling facilities for handling their milk, frequently are amazed when they mount their used filter disk or strip for the first time, at the amount of sediment it contains when ten gallons of milk has passed through it. They find, perhaps, that the udders of the cows had not been thoroughly washed. Also they find that teat cups of the milking machine may have gathered sediment when the full bowl of milk was being emptied, or when teat cups were attached upon teats of low hanging udders.

"The Badge of Merit" frequently is now being used by owners of fluid milk farm dairies, to check upon their help or even members of their own families – father vs. son – even in some cases wife vs. husband – but very frequently owner vs. hired hand. This is done in friendly rivalry to see who does the better job of keeping all dirt out of the milk bucket.

Philosophy Over the Milk Pail

Frequently I have been asked, evidently because of enthusiastically relating with enjoyment many of my farm experiences,– What is the secret of my interest? This being the thanksgiving and Christmas Season of the year, perhaps I can, in appreciation of my many associates and my fine host of friends, appropriately give my philosophy. When having lived my first half century, several years ago, I decided to remove all negatives from my life. This resolution, for the first couple of years was very difficult to keep, because I was continually recognizing the negativeness in my neighbors. However, determination and will power have assisted in making progress. I now find today because of forming a habit, this resolution has its full swing. I find it is good to refuse to accept anything in the negative. It is well to always look for the light. One threads a needle by holding the eye between himself and the brightest spot of light about him. The eye of the needle is the same size wherever held,

and has the same capacity at all times to let light through, but we must hold it up ourselves to focus on the brightest spot of light to thread it. Taking this attitude, I have found every farm approach, when answering what we say to ourself before our arrival is trouble, always becomes a friendly contact and one in which friendliness has been generated. This can be true and experienced in all contacts of life.

In my present philosophy since the half century I have found it very necessary to harness my prejudices so that they do not lose for me my happiness. Sometimes these traces or tugs have to be very strong, because in an active career of living many prejudices have been formed. I have found many people who for some reason or other (perhaps because of my own jealousy) I condemned and criticized and declared no good. I have lived long enough to note they have lived a useful life and perhaps I was the one who was the loser by not taking time to learn from them.

Nineteen forty-nine (1949) was a great year of progress for the field work of the Dairy Industry, because it was under the leadership of many energetic, intelligent, thorough directors. To all of these the nation can give thanks, as I personally herein do, for what they have accomplished for our people, both farmers who are dairymen and the city consumers, by helping to keep our milk supply COOL, CLEAN and COVERED, all the way from healthy cows to market.

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JUDGING STANDARDS QUESTIONED

Udder Veins and Abdominal Milk Wells Not Real Sign of Cow's Capacity

The "milk veins" and "milk wells" on a dairy cow's abdomen and the network of surface veining on the udder apparently have little or nothing to do with her ability to produce large quantities of milk, according to a report just issued by the Agricultural Research Administration, U. S. Department of Agriculture.

This conclusion, which is contrary to what is generally taught in the classroom and stressed in showing judging, is the result of research by W. W. Swett and C. A. Matthews of the Bureau of Dairy Industry, who made detailed dissections and studies of the circulatory system of the dairy cow's udder.

For many years, according to these investigators, dairy-cattle judges, breeders, and educators, have attached considerable importance to the number of veins on the udder surface and to the size and length of the so-called milk veins on the abdomen, and also to the size of the holes (milk wells) through which the abdominal veins enter the body, in the belief that these mammary characteristics are an indication of milk-producing capacity.

Swett and Matthews compared the milk-production records of 195 cows (106 Holsteins and 89 Jerseys) with the grades assigned to represent abundance of veining on the udder surface, the size and length of abdominal veins, and size of milk wells. They found no significant relationship between any of these mammary characteristics and the milk-producing capacity of the cows.

Veins Vary with Breed

Other comparisons were made to determine whether extensive veining is more likely to be found on some types of udders than on other types. For the Holsteins in this study, the veining was more pronounced on udders of the closely attached type than on the loose, flexible type. Jersey udders showed a similar tendency, but the correlation was not significant. No important relationship was found to exist between the grade for looseness of udder and the grades for abdominal veins or milk wells for either breed.

These studies were undertaken not only to determine the significance of mammary veining, but also to provide a more definite picture of the curculatory system of the udder and to clarify some of the controversial points on how blood is brought to and removed from the udder.

Other investigators have found that approximately 400 pounds of blood must pass through the udder for each pound of milk produced, which would be 20,000 pounds of blood daily if a cow were producing 50 pounds of milk. Swett and Matthews found that only a very small amount of blood is in the udder at any one time, however, which indicates that enormous quantities of blood are being removed continuously from the udder.

It has been assumed previously that the blood leaves the udder by three main routes, that is, by two internal routes and by the subcutaneous abdominal veins usually referred to as the milk veins. One of the internal routes, however, was found to be carrying blood to the udder rather than away from it.

The investigators concluded that removal of blood from the udder is virtually limited to two routes. Moreover, the veins of the one internal route appear to be large enough in themselves to carry all the blood away from the udder, which is further evidence that the size or length of the milk veins may be of little importance in the cow's circulatory system.

●

DON'T LET THEM DIE

A University of Illinois veterinarian pointed out recently that, according to best estimates, one out of every five calves dies either at birth or before it reaches maturity.

But, said Dr. G. T. Woods, "You can avoid your share of this loss through good sanitation and management, good rations, and good parent stock."

You need good, healthy parent stock, free from brucellosis, in order to grow healthy calves.

Sani-Matic TANKS

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The illustration to the right shows the two compartment wash and rinse tank for use in the farm milk house. These tanks are available in one, two or three compartments to wash, rinse and sterilize – with or without heating equipment. Sani-Matic equipment is the choice of over half million dairy farmers.

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JANESVILLE, WISCONSIN

Selling, Labor Relations Get Top Spot at Illinois Convention

Twenty-one Hundred Dairymen Hear Speakers Flay Government Control at Association's Biggest Meeting

LABOR, selling and quality were the big three that walked the floor at the 17th Annual Convention of the Illinois Dairy Products Association December 12, 13, and 14. Held in Chicago's Hotel Morrison, the conclave drew more than twenty-one hundred Illinois dairymen and suppliers.

Arranged and directed by Executive-Secretary M. G. Van Buskirk, the session featured three luncheons, two banquets, and a buffet supper. Ten group meetings tailored to suit the needs of specific segments of the dairy business considered subjects that ranged from can washing problems to the diplomacy of labor relations. Individual speakers and panel discussions tackled industry questions from every approach.

Palm as the most stimulating purveyor of mental food went to Owen Richards, General Manager of the American Dairy Association, who called for "new approaches, new appeals, and business imagination" in the job of selling. "We are not selling in the 20's or the 30's," Richards said, "We are getting ready for the competitive 50's."

Some Insistent Opportunities

As an example of the opportunities knocking at the dairy industry door, Richards cited the case of sour cream. This product has been known for centuries, the speaker declared. Tested in company with salad dressings and mayonnaise, sour cream—when unindentified—was invariably number one in consumer preference. Yet the amount of sour cream sold as compared with the other types of dressing is insignificant. "Here is one of our greatest sales opportunities," Richards said. "It is a natural."

Dealing in case histories, Richards unfolded the amazing story of vegetable shortenings. In what some observers felt was a positive answer to the oleo dilemma, the speaker showed how lard, the most widely-used shortening twenty years ago, was toppled from its preferred position purely through aggressive selling. "It was not a matter of price," Richards pointed out. "Lard sold from twice to two-thirds the price of vegetable shortenings when the campaign began. Today lard is not only far outdistanced sales-wise, but it is selling for only half as much as the vegetable shortenings. People are paying more today for the identical commodity that twenty years ago grocers found difficult to move at half the price! Consumers became convinced that the best product was vegetable shortening and price became a secondary consideration." The parallel with butter was too close to be missed.

Price Relatively Unimportant

Developing his theme that price was not as important a consideration as most dairymen believed, Richards pointed out that seventy-two million packs of cigarettes are sold each day in the United States. Cigarettes, he observed, sell for the same price as a quart of milk. Yet if the price of cigarettes goes up a cent it creates hardly a ripple, whereas an increase of even a half cent in the price of milk is front page news. The answer, Richards said, was in the public attitude toward cigarettes. This attitude, he emphasized, was created and sustained by advertising. He contrasted the large sums spent by the tobacco people for *one* product with the relatively small amount spent by the dairy industry for *all* its products.

The observation that packed the wallop was Richards' statement that if the price of milk were lowered one cent the public would not even say "Thank You." Presumably they would argue it ought to be more. But if that one cent were used for advertising purposes it would finance the greatest food selling campaign the country has ever seen.

Other Problems Discussed

Other speakers who appeared on the program considered the general economic and political situation. "The greatest single problem facing us today is the possibility of a general price collapse," said Earl M. Hughes, who styled himself as an "economist and farmer." "The only price level that is any good is the one that prevails the longest," Mr. Hughes said, pointing out that it takes a generation at least for society to accustom itself to a price level greatly different from the one that has been in effect.

He urged free and open markets as the only real solution to the problem of widely fluctuating price levels and said, "that is the only place where the public will vote intelligently with its 'money ballot' on questions of price."

M. L. Finneburgh, General Sales Manager, Soda Fountain Division of the Liquid Carbonic Corporation, speaking before milk dealers and ice cream men, declared that the real sales effort should be made in the direction of expanding consumption rather than taking customers away from competitors.

Using a quotation from a leading news magazine that described conditions in a poorly-managed ice cream store, the speaker said that counsel and advice that would insure a sound operation were more valuable to the store owner than the loan of a down payment on a new soda fountain. He described ice cream as the greatest traffic builder any drug store could ask for, and called for a rebuilding of the bulk ice cream trade. He saw no need for the recent decline in ice cream sales. His solution was an intelligent, aggressive selling approach.

The Group Sessions

One of the best group sessions held at the convention was presided over by

Meet 'em and Greet 'em

Folks in the milk business are about the joiningest group we've known. National, State, and local organizations embracing producers, distributors, and suppliers dot the landscape. Nursing these associations along the business highway are a group of able men whose most potent stock in trade is a boundless enthusiasm coupled with a vigorous executive ability.

We have felt for some time that we ought to get to know these association secretaries better. MEET THE SECRETARIES is the result of our effort to meet this need. This month it is "Andy" Anderson, Ohio Dairy Products Association.

XUM

MEET THE SECRETARY

O. E. ANDERSON

A TRANSPLANTED KENTUCKY hillbilly with a flair for apple polishing . . . that might be termed a thumb-nail sketch of O. E. "Andy" Anderson, who is now serving his fifth year as Executive Secretary of the Ohio Dairy Products Association. Even Andy admits that such a discription fits quite well.

Born in a puncheon-floored log cabin at the "head of a holler" in the mountains of Eastern Kentucky in 1911, Andy might have been another Abe Lincoln except for the fact that he didn't like rail splitting. Preferring, instead, the splitting of infinitives, he finished High School and came to Ohio in 1930 to become a reporter on a small-town semi-weekly (or weakly) newspaper in the Southeastern part of the state.

After one year as a reporter at $6.00 per week, he was given a 100% increase in salary, plus the title of editor. Emboldened by such phenomenal success, he acquired a bride, a second-hand Chevrolet, and a determination to prove the vaunted "power of the press." After having his ears trimmed during a couple of such editorial crusades, he decided that discretion was still the better part of valor and used a very calm "We" thereafter.

Next stop on the line was the editorship of a weekly farm newspaper in Northeastern Ohio for four years, followed by three years as manager of the Youngstown-Warren, Ohio. area for the Dairymen's Cooperative Sales Association. Desiring to rid their market of such an encumberance, the milk dealers there recommended Andy for the Secretaryship of the state dairy products association, so over the fence he jumped, in the Fall of 1945.

Knowing nothing about the dairy business apparently proved very little handicap . . . the proof being that he still has the job. In addition, he now has two daughters, a self-remodeled home, a hobby-garden of more than 200 varieties of perennial flowers, and a very dignified tomcat. What else could a man want . . . except perhaps another raise in salary.

The Ohio Dairy Products Association has continued to move along under Andy's direction, winning the colored oleo fight in the legislature for three straight terms (and then losing it by vote of the poor, beknighted masses); securing numerous improvements in the state's dairy laws and regulations; gaining a very substantial reduction in the industry's industrial compensation rates; and engaging in a very broad program of extension dairy technology and business training conferences throughout the state each year. Latest such conferences included nine district ice-cream grading clinics. And, then, there's the Ohio convention, which probably ranks second only to Illinois in total attendance each year, and which soon will be held (January 23-25) at the Netherland-Plaza Hotel in Cincinnati. (Free commercial announcement.)

As far as we can determine, Andy has no trouble finding Association work to keep him busy.

Paul Potter, well-known labor relations consultant. Employer-employee relations was the subject before the group. Courtney Johnson of the Beatrice Foods Company and Frances E. Hickey, Rockford, Illinois attorney, were the principal speakers.

General concensus was that local groups should bargain collectively with union representatives. One of the most effective tactics in union operation is to play one employer off against the other, the speakers declared. Mr. Hickey urged the employment of a trained representative to work out contract problems with union agents. He said that an exhorbitant number of contract meetings were unnecessary. They are usually a sign of a campaign designed to simply wear the employer down to where he agrees to the terms offered by the union. A man, wise in the ways of the bargaining table, knows how to meet this kind of thing, the speaker said.

Cautious Optimism Reflected

Over-all impression imparted by the meeting was one of cautious optimism. Many problems, – political, economic, managerial,– confront the industry. The unlikehood of any general collapse in the price level, plus a growing awareness of the need for a selling and merchandising problem geared to the hour, were the soundest elements justifying the general impression.

Best laugh of the gathering was furnished by Everett M. Dirksen, former United States Congressman from Illinois. Dirksen, who flayed the idea of big government from directive to endorsement, was especially critical of big indebtedness.

Stating that the national debt amounted to about two thousand dollars for every man, woman and child in the United States, the speaker related the story of a man in a maternity hospital. Observing the new-born babes squalling unmercifully in their baskets, the man said to a passing nurse, "What are they hollering about ?"

"Mister," the nurse replied, "If your pants were wet and you were out of a job and owed two thousand dollars, you'd holler too!"

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EXPANDS CARTONING LINE

Springfield, Mass.–Sale of their line of packaging machinery has been announced by General Mills, Inc., Minneapolis, Minn. The increased demand on management and plant facilities due to expansion of the Company's home appliance and contract manufacturing activities made the sale necessary, according to A. D. Hyde, President of General Mills Mechanical Division.

Package Machinery Company, Springfield, Mass., purchased the Tray-Lock and finished edge carton set-up machine and ice cream cartoning unit originally developed by F. D. Palmer and re-engineered by General Mills. The transfer was effective December 1st. This brings into the Package Machinery Company fold the complete Palmer line, the major part of which they acquired last July.

The Tray-Lock and finished edge machines form ready-to-fill cartons from flat blanks and require no operator; the ice cream cartoning units were engineered to set up and close cartons antomatically.

Police The Industry! U. S. Tells Dairy Men At Denver Convention

Colorado Meeting Hears Food and Drug Head Criticize Sanitary Practices in Handling Milk

By **STEWART FAULKNER**

THE NATIONAL dairy industry was severely criticized for continuing unsanitary practices and permitting slipups in the handling of dairy merchandise by Wendell Vincent, regional food and drug administrative chief.

Speaking before the Western States Dairy Conference, the Colorado Dairy Products Association, and the Denver Dairy Products Association, the government official warned the dairy industry that immediate steps must be taken to "police the industry thoroughly."

Several specific examples of unsanitary practices in the dairy industry were cited by Vincent.

"Looking back ten years ago," said the administrative agent, "it is a wonder to me how conditions within the dairy industry have ever been allowed to become as bad as we found them."

"In the past ten years," he continued, "much progress has been made, particularly in plant development, and some of the bad practices, in part, have been stopped."

"However," he said, "improvement in some branches of the dairy business comes very slow, judging from appearances."

Dairy conditions in Colorado and most of the states of the southwest region are good, Vincent stated. By "good dairy conditions," the speaker pointed out, "is meant the present conditions compared to those that existed ten years ago."

"What the industry, and all its members must realize," said Vincent with emphasis, "is the fact that conditions are still not good by the comparative standards exacted for other food commodities!"

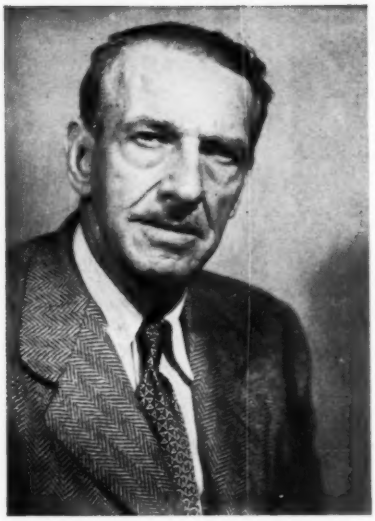
With the fiscal year ending June 30, stated Vincent, the food and drug administration found it necessary to carry out seizure orders of dairy products in the United States totaling 124, representing a total of only 17 less than the previous year.

Specific complaints against some members of the industry included the following:

Failure of cottage cheese manufacturers to pack full weight; infestations of dairies and condensed milk plants with rodents and cockroaches; manufacturing of cheese under unsanitary conditions and using dirty milk; failure of manufacturers of dried skim milk to observe the legal requirement that the product be made by drying sweet milk.

Dust on the Sugar

An inspection of one ice cream plant recently revealed a blue dust on corn sugar bags and inquiry revealed that the dust was a roach powder sprayed throughout the area three days previous, Vincent stated.



WENDELL VINCENT

"The powder contained 45 percent sodium fluoride, a strong poison, and 50 percent borax – a most unhealthy combination for human consumption," Vincent remarked.

Some firms have been using filthy and decomposed milk and cream, and others have been afflicted with a serious rodent problem, he continued.

"Not a very good record considering that the food and drug laws have been in force – or rather, operating – since 1906," Vincent commented.

Rumors concerning the dangers to the public milk supply by the use of DDT as a dairy insecticide are unfounded, Vincent said.

"Cattle will store and accumulate DDT in their bodies, however, and secrete it in their milk," Vincent pointed out, "and so the industry must be on guard that no risk should be taken with so important a national food as milk."

The food and drug administration is currently conducting tests of ground alfalfa fodder, said Vincent, but in the meantime owners must caution themselves against the use of this animal food when it has been sprayed with DDT.

Official samples of alfalfa meal have yielded as high as fifty-six parts per million of the insecticide, he said, and a concentration of twenty-five parts per million is sufficient to result in a dangerous amount of DDT in the milk of the cow which eats such fodder.

Returning to the problem of sanitation, Vincent said, "Most dairy plants are sanitation conscious, but the problem of

Catching a few informal minutes between activities at the Colorado convention: E. B. Kellogg, Milk Industry Foundation; Owen Richards, American Dairy Association; and Amon Bradsaw, Colorado Dairy Products Association.

obtaining clean and safe milk at all times is one that requires eternal vigilance."

"We know that there are men in the industry who lack an appreciation of their responsibilities. Many of these men are not interstate operators: solution to this problem of handling and supervision lies in assistance to state authorities and ample support of these authorities to police the wayward members," he stated.

"It is your obligation to insure proper supervision of your field and plant operations to the end that there be no further use of improper milk or creams," Vincent told the dairymen. "Don't let a minority of your industry, with their lax operation, cast reflections upon you, who, in the aggregate, are striving to maintain plants of top character and reputation."

Milk Industry Vital

Owen M. Richards, general manager of the American Dairy Association, Chicago, emphasized the importance of the dairy cow to the nation's economic structure in his speech at the opening of the Conference.

"The dairy industry," Richards pointed out, "provides more employment to the nation's workers than either the steel, transportation, or mining industries."

"On the farms, in the transportation lines, in processing plants, and delivery to homes, total employment of the dairy industry is far greater than any of these three fields of employment," he stated.

In his address before the 300 delegates from the seven Rocky Mountain states, Richards pointed out that 60 million quarts of milk are moved each day into American homes.

Although prices have risen, one can buy more milk at today's average hourly wage level than he could before the war, continued Richards.

Milk consumption and ice cream sales are double the total of 1939 and 1940, he continued. Cheese consumption has increased seven and one half times in 1948 over the years previous to the war, and butter sales have soared 24 percent during the past year, Richards remarked.

Colorado Dairy Products Association, Inc.

Officers and Directors elected to serve in 1950 were:

C. K. Enstrom, Grand Junction, Colorado, President; J. B. McLagan, Brush, Colorado, Vice President; Ammon Bradshaw, Denver, Colorado, Secretary-Treasurer; C. K. Enstrom, Grand Junction, Director; Frank Mauro, Jr., Walsenberg, Colorado, Director; Charles Crosthwaite, Craig, Colorado, Director; T. C. Adams, Colorado Springs, Colorado, Director.

Denver Dairy Products Association

Norman E. Moe, Denver, Colorado, President; Ed H. Watson, Denver, Colorado, Vice President; Ammon Bradshaw, Denver, Colorado, Secretary-Treasurer; Robert H. Reeves, Denver, Colorado, Director; Brown W. Cannon, Denver, Colorado, Director; Sam M. Robinson, Denver, Colorado, Director.

●

INDIANA CONVENTION SET

As we go to press the Indiana Dairy Products Association is putting the finishing touches on arrangements for the 32nd annual meeting. The conclave is scheduled for the Claypool Hotel, Indianapolis, January 15, 16, 17, and 18.

Secretary Dick Larson has lined up what looks like a first class program with variety and color to suit all tastes. Indiana Dairy Boosters are furnishing the entertainment in co-operation with association officials.

Costs and selling are the most prominent subjects on the program. "Let's Sell Milk", "Costs of Milk Distribution", "Merchandising In The Modern Manner", "Lwaks In The Plant Dollar" are indications of industry thinking in the Corn Belt.

The ever growing problem of relations with the government come in for a share of the attention, with E. M. Norton of the Production and Marketing Administration discussing the problem of The Federal Price Support Program. Other speakers include Bill Gordon, editor of the Dairy Record, Howard Grant, publisher of the Ice Cream Field, Fred Bable, Purdue University, H. W. Gregory also of Purdue, Bob Hibben, International Association of Ice Cream Manufacturers, Robert Remaley, Kraft Foods Company, Bryan Blalock, Borden Company, J. R. Thompson, Thompson Dairy Company, and W. A. Klepper, Cloverleaf Creameries.

●

SPONSOR SAFETY PROGRAM

North Carolina Dairy Products Association has been cooperating in a safety program with the N. C. Industrial Commission since 1945. It has been the policy of this Association to award a trophy to the dairy plant in each of the four divisions – (determined by number employed) – making the best record, or having the lowest number of accidents per 1,000 man-hours worked.

These contests have run for 34 weeks each year, and the progress made is most commendable. In 1945 the dairy contest results showed the frequency rate on lost time accidents to be 26.23. In 1946 the rate increased to 30.03. In 1947 it dropped to 19.27. The year 1948 rate was 16.15, and in 1949 an all-time low of 14.03.

The number of plants reporting no lost-time accidents at all increased from 46 in 1945 to 61 in 1949.

HAVE YOU READ THE WANT ADS?

Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL SILVER and BRONZE.
GUARANTEE
Send for a trial order
Satisfaction fully guaranteed
KURLY KATE CORPORATION
2215 S. MICHIGAN AVE. CHICAGO 16, ILL.
Kurly Kate
stainless metal sponge
FOR EASIER INDUSTRIAL CLEANING
SOFT ON HANDS
SANITARY
ORDER FROM YOUR JOBBER OR WRITE DIRECT

Tank Cleaner, Cold Milk Separator, Among New Items

Cleaning Time Greatly Reduced by Automatic Device — Good Sanitizing Results Reported

FIFTY YEARS of spectacular progress is the record of the dairy industry in the first half of the twentieth century. Considered in detail the most impressive developments have come in the field of equipment and processing, least impressive has been the evolution of distributing and merchandising techniques. Stainless steel, homogenization, and short time high temperature pasteurization rank as the leaders in the parade of technical contributions to better products and efficient operation. Remarkable progress in cleaning and sanitizing must also qualify for a front line place in a review of the achievements of the five decades.

As the second half of this hundred year period begins research, design, and production have a solid basis on which to extend the movement toward excellence that has marked the first half. Two new developments that deserve more than passing attention as of January 1, 1950 are a holding tank cleaning device and a cold milk separator.

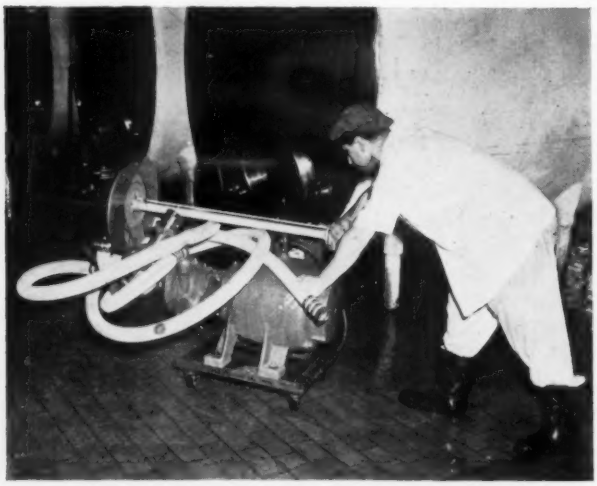
The cleaning device is an automatic affair for washing and cleaning the interior of tanks that are used for the processing and transportation of milk. This includes tank trucks, railroad tank cars, weighing tanks, storage tanks, milk products tanks and cookers, cream tanks and similar storage equipment.

The method of cleaning consists of directing a series of two high velocity streams of warm detergent solution under 150 lbs. pressure against the interior of the tank to be cleaned. The streams of detergent solution are delivered through a series of rotating nozzles. The nozzles are the principal features of the cleaning machine which is lowered into the tank or inserted through a side opening.

* * *

THE MACHINE consists of two opposing jet nozzles impelled by an internal turbine and revolving automatically in a vertical and horizontal plane. The rotation in the vertical plane gives complete coverage of the interior of the tank at a particular point. If this were the only motion of the machine a band several inches wide around the interior of the tank would be cleaned. By virtue of the rotary motion in a horizontal plane this band is constantly extended so that the entire interior surface is exposed to the high velocity streams of detergent solution. The motion in both planes is a complete rotation. In a sense the operation of the machine is similar to what you would get if you took a rotating lawn sprinkler, held it at right angles to the ground, and while it rotated around its axis say from east to west, you caused it to rotate from north to south. Of course the Pyrate machine is a lot more than a lawn sprinkler but the idea is reasonably similar. Between the two movements the spiral effect is produced. Each successive spiral overlaps the preceding one sufficiently to give complete coverage.

According to men who have been working with the machine in its preliminary stages several important advantages result from this method of cleaning tanks. The streams of detergent solution under high pressure will remove all milk products from the tank. This has been established in tests and through trial installations at the Dairymen's League plants in New York City. A second advantage is a thoroughly cleaned tank during every cleaning operation. That constant threat of accumulated milk stone is removed because of this thorough-



The entire cleaning unit—pump, hose, and cleaning machine—is portable. In this picture operator is rolling equipment into position for cleaning holding tank.

A close up of the cleaning machine shows connection for hose, cover device for sealing manhole, and, at the bottom, the rotating nozzles that project cleaning solution.

ness. The automatic character of the machine eliminates both the necessity of a man entering the tank and the variations in cleaning efficiency that are present whenever the human element is involved. Finally no brushes are needed, eliminating the possibility of an unsanitary brush and simplifying the entire cleaning process.

° ° °

THE PRINCIPAL employed in this method of cleaning has been applied for some time in the cleaning of tanks in other industries, notably oil. The use of this method in the dairy industry is a new development. The results of a two months demonstration at the Dairymen's League plant on 48th Street in New York showed what the machine is capable of doing. A report on the tests given to Mr. Paul Corash of the New York City Health Department over the signature of M. T. Kennedy, the representative in charge of the test demonstration, gives a good outline of the machine's achievements. This report, written in September says:

A demonstration has just been completed at the Dairymen's League plant on 48th Street and 12th Avenue, with the cooperation of Mr. Orr, Plant Manager, and Mr. Quincer, Chief Chemist. Your office was represented by Mr. Gilberty and Mr. Domingo, who made extensive tests during this period, the results of which you probably have by now.

"During this test we cleaned a 7,000 gallon tank for seven consecutive days to check for a possible build-up of milk stone. A paste test conducted by Mr. Gilberty established thoroughness of coverage and cleaning ability of the machine, and visual examination and swabs indicated a clean tank at the end of this period.

"Five tanks used for pasteurized storage of cream and milk were cleaned by machine for a week straight. Mr. Domingo made tests during this period with fluorchrome and ultra violet ray equipment, and swabs were taken and analyzed by Mr. Quincer. The results established the tanks as clean.

"Two steam-jacketed ice cream mix tanks were cleaned to see if the machine would remove the heavy deposit left from the cooking operation. Mr. Domingo tested both with the violet ray equipment and compared them to a similar tank cleaned by hand. It developed that all three tanks had a surface film of milk stone left from previous cleanings, but the machine cleaned tanks were as good as the one cleaned by hand, except for the bottom where the circulating solution acted as a buffer against the velocity of the jet. This situation can be corrected by using a separate circulating tank.

"Two tank trucks were machine cleaned and both were inspected by Mr. Gilberty and Mr. Quincer. One was an improper test due to an insufficient amount of solution for circulating, and a small streak of grease was found on the forward end. The other was properly treated and it was declared clean.

"One thing I would like to mention is that four of the men actually doing the cleaning every day at Dairylea stated, after the demonstrations, that the machine left less film and did a better job than manual cleaning.

"It was the consenus that if all tanks were acid treated before the machine was placed into use, it would be very unlikely that any milk stone would accumulate. Tests conducted over a period of time will determine whether or not this is so."

The pressure in the machine, specified at 150 pounds per square inch, is delivered by a pump especially designed for the purpose. The manufacturer proposes to install the cleaning machines on a rental basis but the pump becomes the property of the dairy.

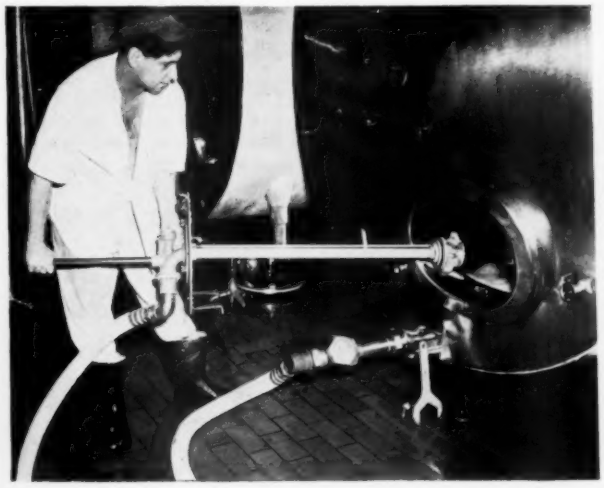
As we go to press the machine has completed a three months' trial run at the Dairymen's League plant. According to Mr. Orr, plant superintendent, the device has worked out well. Its principal value appears to be in speed and thoroughness.

° ° °

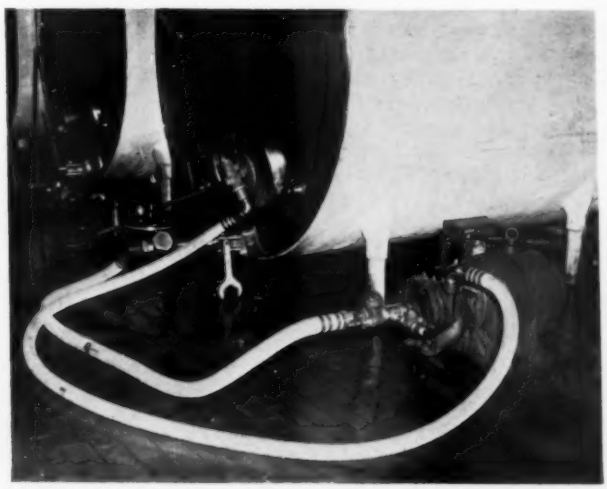
EVER SINCE the first piece of milk separation equipment came on the market seventy odd years ago manufacturers have been constantly improving that piece of equipment. One of the most recent developments in this particular field is a cold milk separator. For a long time dairy plant operators have been intrigued with the idea of separating milk while it is still cold. The development of a cold milk separator might well be said to be the result of popular demand. It is now possible to separate milk at 40 degrees F. with a high degree of efficiency.

The development of a cold milk separator was not without its problems. As dairy plant operators know, the fat globules in cold milk are small in size. Heating increases the size of these globules and consequently increases the rapidity of rise. Heating also decreases the vis-

(Please turn to Page 67)



Machine is introduced into tank through manhole. Couplings are made before placing the machine in position. No need to uncouple when shifting to next tank.



Sealed up and ready to go. Cleaning solution is taken from the tank by the pump and forced back through the machine under pressure of 150 pounds per square inch.

USING OUR SEPARATOR

All Purpose Pasteurizer

A NEW ALL-PURPOSE Pasteurizer has been developed by the Purity Manufacturing Company of Cattaraugus, N. Y. It is built in four sizes: 200, 300, 400 and 500 gallon capacities and is designed for heating and cooling milk, cream, ice cream mix, chocolate milk, buttermilk and the many other dairy products.

This new pasteurizer is a complete packed unit employing a large capacity mono-bloc pump to produce high velocity circulation of water in the jacket,

promoting uniform, rapid heating and cooling. Cooling is effected through introduction of city water, then chilled water into the system.

The 200 gallon size will heat milk from 50 degrees to 143 degrees in 22 minutes. Cooling from 143 degrees to 36 degrees using 35 degree water takes 40 minutes. The 400 gallon unit will heat heavy cream from 60 degrees to 155 degrees in 45 minutes. Cooling from 155 degrees to 45 degrees using city water and chillled water takes 1 hour 45 minutes.

If chilled water is not available for cooling, the Pasteurizer is available for cooling with ammonia, freon, methyl, etc. With the water as a cooling medium between the coolant and jacket, there is no danger of shocking the product or freezing on of the product to the walls of the inner liner.

The circulating Ducts and distributing jets are of stainless steel. The circulating pump has a large volume and low head which results in a maximum circulation during the heating or cooling, 80 g.p.m. for the 200 gallon size and 160 g.p.m. for the larger units. The liquid in the jacket travels in a counter clockwise direction. This reverse flow to the content of the inner liner plus the high volume of circulation results in extremely fast heating and cooling of the mix. For heating, a specially designed noiseless and efficient nozzle injects steam into the circulating water.

●

Nylon Paint Brush

ANNOUNCEMENT HAS recently been made by The Fuller Brush Company of 11 new 100% Nylon Paint Brushes to augment the company's present line of 100% pure bristle paint brushes.

It is claimed that the new nylon brushes will last four times as long as bristle brushes on all surfaces including rough ones such as concrete, brick, and structural steel. The new nylon filaments are said not to split, fray or become brittle, to be resistant to most chemicals, and to be unaffected by age or weather, rodents, insects and fungi. They can be used with all types of oil and water paints, synthetics, lacquers, kalsomines and enamels.

One of the original objections to nylon paint brushes – tips too coarse for fine painting – has been overcome in the new Fuller nylon brushes by a special sanding process which softens the tips and improves capillary attraction so that paint is applied smoothly and evenly. With continued use the tips will maintain this taper. Scientific blending of different nylon lengths and diameters, plus the addition of some crimped filaments, increases the holding capacity of Fuller Nylon Paint Brushes.

Eight sizes of wall brushes, two stucco brushes and one kalsomine brush are available in the new line. Further information and descriptive literature may be obtained by writing to Industrial Division, The Fuller Brush Company, 3635 Main Street, Hartford 2, Connecticut.

●

Plate Heat Exchangers

RECENTLY PUBLISHED by The Creamery Package Mfg. Company, is a new bulletin, E-916, on the CP Stainless Steel Multi-Pass Plate Heat Exchangers with the smaller plate.

HTST Flow Diagram in 5 Colors

A feature of the bulletin is a two page, five color flow diagram graphically illustrating a CP Multi-Pass High Temperature Short Time Pasteurizer, and a sec-

tion of plates opened to show flow pattern. Also shown are typical installations of mix coolers, raw milk coolers, heaters and H.T.S.T. jobs.

Copies of the bulletin are available by request to this publication or to CP's General and Export Offices at 1243 W. Washington Blvd., Chicago 7, Illinois.

A new 10 page catalog on Creamery Package stainless steel Multi-Process tank is also available. The CP Multi-Process ing methods where pasteurizing, heating or cooling temperatures are required.

This attractive 2-color catalog contains many installation views of the CP Multi-Process Tanks as well as several diagrams showing construction details and dimensions. The principles of Film (Hot Water) Heat, Vapor (Steam) Heat and Cooling methods have been outlined

for the benefit of those who would like to know which method is best suited for their particular plant or processing problem.

Copies of the two bulletins may be obtained from The Creamery Package Mfg. Company, 1243 W. Washington Blvd., Chicago 7, Illinois.

●

"Plastic Deep Dish" for Cottage Cheese

G. P. GUNDLACH & CO., Cincinnati, sales assistants to the Dairy Industry, have announced their new re-use container for cottage cheese.

The Gundlach "Plastic Deep Dish" is a round clear 12 ounce container with a Flexible ruby lid that provides an exceptionally tight seal.

G. P. Gundlach, president, points out that the dish is an excellent sales stim-

ulator . . . . gets routemen to make a lot of calls and sell not only cottage cheese but all products.

The 12 ounce size is ideal for packaging cottage cheese and the "Plastic Deep Dish" is practically unlimited as to a number of uses for it in the home.

Mr. Gundlach states that it makes an ideal children's cereal bowl; perfect dish for left over foods; wonderful salad mold; a convenient place for men to keep nuts, bolts, fishing tackle, etc.; splendid place for crayons, small toys, etc. An extra feature is that the flexible lid makes an ideal oversize coaster.

According to Mr. Gundlach the Lenten season, which this year begins February 22, is the perfect time for such a promotion with the "Plastic Deep Dish" as the leader. A promotion of this type is also excellent immediately after Lent to keep sales up to their Lenten high point.

A complete promotional campaign for selling Cottage Cheese in the "Plastic Deep Dish" has been prepared. New promotional material is also available on Flavored Cottage Cheese and regular cottage cheese. This includes bottle hangers, folders, posters, etc.

●

Electric Pasteurizer

A NEW "ELECTRA-HEAT" PASTEURIZER, designed for heating by electricity instead of steam, is announced by Damrow Brothers' Co., Fond du Lac, Wisconsin. Of all-welded stainless steel construction, similar in design and operation to the Damrow Vapor-Film Line, the new "Electra-Heat" Pasteurizer is self-contained, requiring only water connection. It is developed for applications where off-peak electric power rates are favorable, and where sufficient steam is not available.

The new pasteurizer is economical to operate. The water level is below the pasteurizer bottom, which prevents normal scaling and avoid the need for draining the already-heated water during holding period. This also saves substantially on electrical consumption, for less heat is required to bring the water up to temperature for the next batch. Electric heating elements are mounted in the bottom, immersed in water, and can be removed for servicing.

The new Damrow "Electra-Heat" Pasteurizer is now available in rated capacities of 30, 50, and 100 gallons. Estimated power consumption is 5, 10, and 18 KWH respectively, based on heating milk from 40° to 143° F. in approximately 30 minutes. Full details may be obtained by writing Damrow Brothers' Company, Fond du Lac, Wisconsin.

●

Ice Cream Packaging

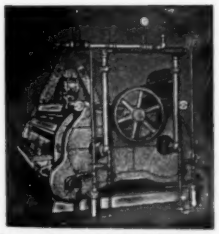
EX-CELL-O CORPORATION, Detroit, Michigan, announces the addition of a new Pure-Pak ice cream packaging machine to its present line of fully-automatic and semi-automatic models.

The latest model, called the "Junior", with a factory-rated speed of 20 to 60 pints per minute, automatically packages

one, two or three separate flavors in No. 2 Linerless Pints. "Junior" machines are also available for No. 2 Linerless Quarts or Ice Tray Pints.

The operating cycle of the new "Junior" (regardless of size or type of package) is one of beginning on one side of the packaging machine with a flat container and ending on the other side with a filled and closed container. This is accomplished by means of a fully automatic and continuous operation in between these two points. . . . The machine is designed to fill up to 60 pints

Better DRY MILK AT LOWER COST



DRY MILK MACHINES
Built in Five Sizes

The Patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs. Complete details upon request.

OVERTON MACHINE COMPANY
DOWAGIAC MICHIGAN

Sales Service for Manufacturers of MILK PRODUCTS

Evaporated Milk—Powdered Skim Milk — Powdered Buttermilk — Condensed Skim and Whole Milk — Powdered Whole Milk.

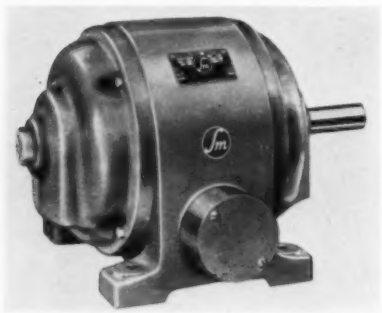
C. W. BURCKHALTER, Inc.
156 Franklin St. New York, N. Y.
WAlker 5-0727

per minute, with sufficient speed regulation, to accommodate variation in freezer production. It is compact, portable and easily hooked up to the feeder lines. Complete details are available upon request to Pure-Pak Division, Detroit 2, Michigan.

●

Splash Proof Motor

THE Sterling Electric Motors, Inc. of Los Angeles recently introduced a new design of Splash-Proof motor, designed for locations which are subject to direct streams of water or other liquids. This motor may be mounted in any position and will keep its Splash-Proof features. The end bells permit free passage of ventilating air through integrally-cast baffles, preventing splash-



ing liquids reaching the interior of the motor. The air is drawn through the rear of the motor and exhausted through the shaft end, thereby blowing away foreign materials, water and liquids from not only the Sterling motor but also the assembly it is driving.

The motor incorporates labyrinth seals on shaft ends, assuring positive protection against entry of liquids into the bearing housings. All bearings are lubricated for life. This motor includes the Sterling Herringbone rotor.

●

Mastic Floor Patch

MASTIC FLOOR PATCH material, released by the Sylvania Chemical Co., of Cleveland, Ohio, is showing good results in repairing old and broken concrete floors. Heavy loads can be trucked over floors repaired with this material within 24 hours after application, according to the manufacturer.

This floor patch consists of a plastic base material mixed with Portland Cement, sand and gravel. It adheres tightly to the floor and does not require chipping or breaking up the old floor.

Advice from the Sylvania company indicates that the material will stand up under the heavy truck loads, and will not chip, break down, crack, crumble or dust out. It may be laid in any thickness, is not affected by weather conditions, and can be used both indoors and outdoors. This material is a non-conductor and eliminates fire hazards. A 5-gallon container of this floor patch is sufficient to cover 50 square feet, ½ inch thick.

●

Industrial Insecticide

A NEW INDUSTRIAL insecticide that can be used with complete freedom where food is handled is being manufactured by Associated Chemists, 2849 N. E. Sandy, Portland, Oregon, it is announced by Mr. Richard L. Rosenberg, President.

The insecticide called "Acee" is designed for control of stored grain and stored food insects such as flour beetles, grain moths, mites and spiders. It is the first industrial insecticide containing pyrenone, a non-toxic agent, to be manufactured West of the Rockies, according to Associated Chemists.

The insecticide with pyrenone provides a fast knockdown and residual killing power. The U. S. Department of Agriculture has rated "Acee" as non-toxic to warm-blooded animals which makes it suitable for use in hospitals, hotels, and food processing plants, the manufacturer said.

"Acee" is effective against the flying and crawling stage of insects common to most industries and can be used as a surface or a space spray, the manufacturer pointed out.

●

Locks Truck Loads

PREVENTION of load shifts and simplicity of operation are twin features of new device called Lode-Lok produced by the Jordan Equipment Company of Oakland, California, for securing loads in trucks.

Device consists of two telescoping tubes made of aluminum with "rubber feet" at either end. The tubes may be lengthened or shortened according to the circumstances by means of an expansion locking-handle and held to the new dimensions by a spring lock. By this means the aluminum tube becomes fixed across the body of the truck and locks the load in place. According to the manufacturer the device will not injure the side walls of the truck and can be used on any type of lining for closed truck or trailer bodies.

The Lode-Lok equipment is applicable to trucking problems encountered in handling milk cans. When not in use the tubing can be locked in place above the back door of the truck body.

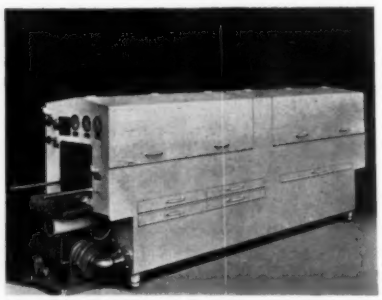
For detailed information write to Jordan Equipment Company, 2526 Wood St., Oakland 7, California.

●

New Case Washer

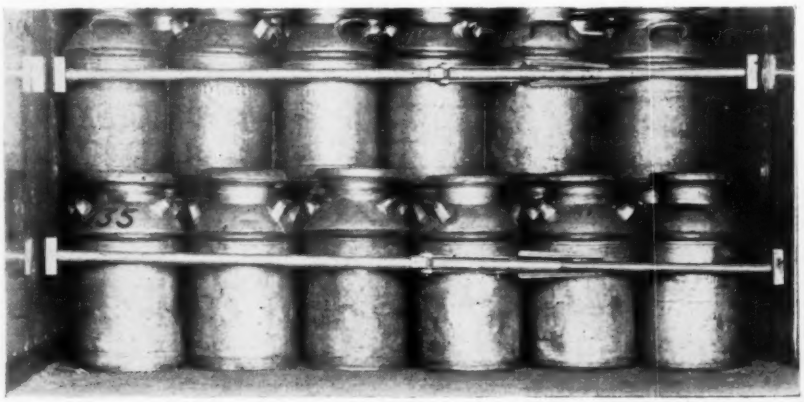
A NEW Case Washer has been announced by the Rice & Adams Corporation, Buffalo, N. Y.

This new Rice & Adams Case Washer



has 4 horizontal drawer-type screens and jets that deliver on all 4 sides of the cases — inside and outside.

The 4 horizontal screens are placed in pairs, side-by-side, with one screen above the other. These screens are drawer-type and can be removed for cleaning by simply sliding out. The foreign matter caught by these screens, will not spill off during the removal from the washer for cleaning. The second screen of the pair catches the foreign matter while the first screen is removed for cleaning. In this way, Case Washer is kept in continuous



operation and at the same time eliminates the possibility of foreign matter getting into the washing water. This keeps the washing water free of foreign matter.

A second feature of the washer is the chisel action jets that shear off the dirt from inside and outside the cases. This chisel action is provided by forcing water at a high velocity and pressure through the nozzles. The water is formed into a thin flat line of impact which results in a sharp cutting action on the sides of the cases.

In the first section of this Case Washer, where the cases receives the pre-wash treatment, a large volume of water under pump pressure is applied through jets that removes loose material and at the same time heats and softens other hard-to-remove foreign matter adhering to the cases. The water used in the first section is charged with detergents and cleaners.

In the second section is located the high pressure wash jets that provide the chisel cutting action previously described. The water in this second section is charged the same as that in the first section.

Following the high pressure jet washing, the cases are given a thorough rinse with a large volume of cold water.

The pumps and motors can be mounted on the side or on the ends of the washer. A hinged hood provides access to the interior.

●

NEW CLEANING DEVICE

(Continued from Page 63)

cosity of the milk. The difficulty, therefore, was in skimming clean, avoiding butterfat loss, under circumstances that were not salubrious for that accomplishment.

A second problem was to prevent the cold cream from churning or buttering in the separator bowl. At temperatures around 38-40 degrees, fat clustering is very pronounced. At 40 degrees the cream zone in a separator bowl becomes filled with heavy butterfat and the bowl is plugged. The space between the discs is filled with fat.

These problems necessitated a redesigning of the tubular shaft. In the cold milk searator the tubular shaft acts as a modified cream pump. It does not pump cream against pressure but rather moves the fat out of the discs to the top of the tubular shaft. The discs themselves had to be made larger and placed closer together. The result was more discs per bowl giving closer separation while the larger size discs meant that the milk would stay between the discs longer and be subjected to a greater centrifugal force for a greater period. Additional holes in the discs were required in order to give a more even flow of the milk. The sum of these changes in separator design had an effect on the capacity of the machines. The cold milk separator operates at just one half the capacity of a hot milk separator.

The cold milk separator has had extensive trial runs and appears to be working out satisfactorily in the field. H. P. Hood and Son in Boston were the first to install this type of equipment.

• • •

THE APPLICATIONS of a cold milk separator are fairly obvious. However, for the record, reports from the field indicate the following virtues: there is no need to heat and then cool in order to separate, the cream produced by cold milk separation is generally of a higher viscosity than that produced by conventional methods. Cream also has a lower bacteria count than the same cream would have if heated and then separated. Washing and clean-up time is reduced due to by-passing the heater and cooler. Of course this last economy is a debatable one where the heater and cooler are in operation anyway but it does enter into the picture in a great many operations. Another value in cold milk separator lies in its usefulness in reducing the load on refrigerating equipment particularly during periods of peak loads. Biggest handicap that the machine must make up through efficient operation and economies is its capacity of fifty percent of the hot milk separators.

An extra dividend from the cold milk separator has been its use in recovering fat from returned homogenized milk. Tests have shown a recovery of up to 70 per cent fat from returned homogenized milk when the milk was heated to 90-100 degrees F.

●

PURE-PAK AD TIE-IN

A FREE NEWSPAPER mat service in booklet form which includes a free master drawing of each dairy's Pure-Pak container for pictorial reproduction is a feature of Pure-Pak Council's dealer tie-in with an elaborate consumer advertising campaign.

According to Ralph C. Charbeneau, Director of the Council the national advertising has stirred up considerable interest in paper containers. The original Pure-Pak container advertising appeared in Saturday Evening Post, Good Housekeeping and Better Homes & Gardens. To these have been added Ladies Home Journal, Woman's Home Companion and Parents' Magazine. In addition, the "Pure-Pak story" will be told regularly to the nation's influential group of Home Economists through "What's New in Home Economics". These food demonstration experts in schools and public utilities contact over 35 million people each year, mostly milk buying housewives. To stimulate greater demand for milk in Pure-Pak by grocers the Pure-Pak Council will use a regular schedule of full page ads in "Food Topics," the largest grocery trade magazine. The phrase "Pure-Pak, your personal milk container" is being applied by the Council as a mark of identification in its actitivities.

Fundamental concept guiding the Council's program is to sell more containers by selling more milk. Reports indicate an increase in the use of the containers particularly in New England. Number of Pure-Pak packaging machines in use by dairies has grown from 200 in 1947 to well over 1,000 at present.

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To Handle Your
COMPOSITE MILK SAMPLES
With the
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Successful Milk Plant Managers in every section of the country have bought and are using **Compo-Cooler** Sample Bottle Cabinets.

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50c additional in Foreign Countries.

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92 WARREN STREET NEW YORK 7, N. Y.

(The deadline for Classified Advertising is the 10th of the month preceding publication.)

No classified advertising will be accepted to run with borders or special spacing. All such advertisements are considered "Display" advertising and will be billed at regular display advertising rates. (Rates and mechanical requirements on request.)

EQUIPMENT FOR SALE

FOR SALE—1 Mojonnier 36″ stainless steel Vacuum Pan. Still in operation. Available immediately. Write H. Woebkenberg Dairy Co., 15 Voorhees St., Reading, Cincinnati 15, Ohio. 1-M

FOR SALE — 600 and 1000 gallon Horizontal Coil Vats, stainless steel linings and tinned copper coils; 100 to 300 gallon Stainless Steel Pasteurizers; 4, 6 and 8 Wide Bottle Washers; G-70, G-160, G-V20 Cherry Burrell Fillers; 2000 and 3000 gallon Pfaudler Glass Lined Storage Tanks for by-products only; 125, 600 and 800 gallon Cherry Burrell Viscolizers, stainless steel heads; about 135 ft. Power Can Conveyor, also 20 ft. Power Case Conveyor with Booster and Power Units. Write or wire your requirements. Lester Kehoe Machinery Corporation, 1 East 42nd St., New York 17, N. Y. Telephone—MUrray Hill 2-4616. 1-M

FOR SALE — 1 Cherry-Burrell Stainless Steel 20 valve nu-line filler. 1 - 12 can per minute Wright & McKinley 1942 straight-away can washer. Elmhurst Cream Co., Inc., 154-21 South Road, Jamaica 4, N. Y. 1-M-t.f.

REBUILT — Pasteurizers, Milk Coolers, Bottle Fillers, Ice Machines, Plate Coolers and Heaters, Homogenizers and Bottle Washers. Send us your requirements. Ohio Creamery Supply Company, 701 Woodland Ave., Cleveland 15, Ohio. 1-M-t.f.

FOR SALE — Bobtail soda fountains 5′ and 6′ complete with pumps and jars, brand new in crates, $350.00 and $395.00, F.O.B. New York Interstate Appliance Co., Inc., 600 Broadway, N. Y. 12, N. Y. 1-M-2

FOR SALE — Girton 3 compartment bottle washer. Washes quarts, pints, half-pints and half-gallons, $500. Write U. V. X. Dairy, Cottonwood, Arizona. 1-M-1

FOR SALE—Sweden Ice Cream Freezers, complete with condensing units, 4-20 quart capacity, brand new in crates, very low in prices. Interstate Appliance Co., Inc., 600 Broadway, N. Y. 12, N. Y. 1-M-2

FOR SALE — 10 gallon milk shipping cans, new, 7¼″ neck, solderless type, with umbrella and sanitary covers. Price dependent upon quantity desired. Communicate E. W. Renk, Golden State Co., 425 Battery St., San Francisco. Phone EX-2-5121. 1-M

EQUIPMENT FOR SALE

FOR SALE — Used York Heat Exchanger Press with 45 stainless steel plates, can be used as 8m lbs. per hour S.T.H.T. Pasteurization System, also Creamery Package Press with 31 stainless steel plates, can be used as heater or cooler, also 10-56mm. stainless steel cappers for Cemac Filler. Excellent condition — everything reasonably priced. Write Karsten Dairies, Inc., 2340 Hermany Ave., New York 61, N. Y. 1-M-1

FOR SALE — 150 gallon Sterline stainless steel Pasteurizer, 2 years old. 1 specialty brass power bottle filler, 2 years old. 1 creamery package rotary bottle washer. 1 Mills 2½ gallon ice cream freezer complete. 1 Cherry Burrell 6 foot milk cooler. 1 DeLaval Separator. Complete equipment for small dairy, $1,800.00. Write Seymour's Dairy & Locker Plant, R 1, Box 70, Peshtigo, Wisconsin. 1-M

FOR SALE — Entire milk plant equipment for 800 gallon daily capacity, also cans, bottles, cases, sanitary pipe and valve, water and steam pipe, electrical boxes, etc., etc. Address Box 263, care this publication. 1-M

FOR SALE — 4-wide Heil Bottle Washer. 2 100 gallons Pfaudler Pasteurizers complete with recorders in excellent condition. Write Post Office Box 25, Long Island City 1, N. Y. 1-M-1

SPECIAL OFFERINGS — 50 gallon Mojonnier Stainless Steel Jacketed and agitated Cheese Processing Kettle; Four 14 ft. Specialty Brass Internal Tubular Cooler (or heater) Sections with ten 2″ stainless steel tubes. Never used. Also 12 ft. Creamery Package I.T. Cooler (or heater) with 28 2″ stainless steel tubes; Mojonnier Stainless Steel Cabinet Cooler, 6 wings each 72 tubes high. Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, N. Y. 1-M

FOR SALE — Mechanical Cow units, consisting of homogenizer, cooler, 6 quart Taylor Freezer ice cream head, unit. This unit will make milk, cream, or ice cream mix. Formerly sold for $1750.00, now only $1075.00. Brand new, crated F.O.B., N. Y. Interstate Appliance Co., Inc., 600 Broadway, N. Y. 12, N. Y. 1-M-2

We can furnish new and used tight barrels for sweetened condensed milk, condensed buttermilk and for the cooling of milk. Also slack barrels for milk powder and other dairy and poultry products. Also egg cases. Write Buckeye Cooperage Co., 3802 Orange Ave., Cleveland 15, Ohio. 1-M-t.f.

FOR SALE — A quantity of United round quart wire crates. Used, but in excellent condition, $.60 each. Apply room 926, Miners National Bank Building, Wilkes-Barre, Penna. 1-M

FOR SALE — Four covered drop center milk wagons in good repair. Write Marvin & Cooley Dairy, Montpelier, Vermont. 1-M

FOR SALE — 1 No. 26 C P Bottle Filler used one year, $1,500.00. 1 C P Bantam bottle washer, $500.00. 1 42 H P Dutton Economist oil burning package boiler, used 4 months, $2,700.00. 1 C P Rotary can washer, $350.00. 78 2-gallon ice cream pans, good condition $1.00 each. 2 small separators; 1 two wheel milk case truck; one can thermometer; round quart bottles and cases. Write East Fulton Dairy, Inc., 935 East Fulton St., Grand Rapids, Michigan. 1-M

FOR SALE — One COLD MILK FILTER — almost new — with size 14-1/8″ x 40-1/8″ bags. Write Hartman Dairy R.D. 9, Pittsburgh 28, Pennsylvania. Phone Colonial 204. 1-M

FOR SALE — One R. G. Wright receiving and weighing outfit complete; never used; cost $840.00 will sell for $400.00. One C. P. Rotary Can Washer, 4 per minute, in use now doing good work, replacing with larger washer; $250.00. One 50 gallon stainless steel Cottage cheese vat, good as new; $100.00. One 100 gallon stainless steel round dump tank with stand, strainer, and sampling well; $75.00. One Waukeshaw BB 12 stainless steel Milk Pump, new in original crate; cost $265.00; price $150.00. Sanitary Dairy, Dothan, Ala. Dial 2-0095. 1-M

FOR SALE — Two used 1,000 lbs. per hour Iron Fireman stokers complete—suitable for boilers from 100 to 200 horsepower. Apply The Dairy and Poultry Pool, Saskatoon, Saskatchewan, Canada. 1-M

EQUIPMENT WANTED TO BUY

WANTED to buy spray milk dryer in good condition. Give full details, make, model, age and size. Write Box 266, care this publication. 1-M

WANTED — Fort Wayne sterilizer 54 case size or larger for use with 6 ounce milk cans. Give full information, best price and location. Write Otto Biefeld Company, Watertown, Wisconsin. 1-M

PLANT FOR SALE

FOR SALE—Milk plant—Raw receiving station in Pennsylvania. Approved for Newark and State of New Jersey. Modern building erected in 1947. For particulars write Box 246, care this publication. 1-M

FOR SALE — Almost new modern dairy plant and home; in Eastern Colorado. Located corner Two Highways. Has dairy and ice cream bar. Only dairy in town of 2,500 located in one of State's best agricultural districts. Write Box 258, care this publication. 1-M

FOR SALE — Milk out-put approved for Newark and State of New Jersey. Butterfat 4 % & over. 250 to 400 cans daily. Contract for full year. Write Box 259, care this publication. 1-M-1

BUSINESS OPPORTUNITY

FOR SALE — Excellent Western Colorado Grade A Dairy Plant. 1949 sales $165,000. 4 routes, wholesale and retail; complete equipment, 5 late model trucks. Will sell business and equipment and lease building or will sell all. Write Box 956 Grand Junction, Colorado. 1-M

$10,000 NET after owner's salary, taxes and all other expenses. 60 can milk plant in one of Ohio's wealthiest communities. Equipment, trucks, etc., in excellent condition. $150 month rent on long lease. 2,000 quarts retail at 18c and 19c. No bad accounts. Records to prove volume, profits and value of $40,000, part cash, balance on good terms. Write or call Mr. Stern, The Miller Realty Co., Realtors, Geneva, Ohio. 1-M

WANTED TO BUY

Plant equipped for manufacturing cheese, powder and cream; radius of 75 miles Utica, New York; Capacity 1000 to 1500 cans over local milk received; New York City approved. Write Box 265, care this publication. 1-M

WANTED — A good used Viscolizer or homogenizer. Give size, make, price and condition. Write Box 260, care this publication. 1-M

MISCELLANEOUS

COAL — Pennsylvania, West Virginia and Ohio. Carload Coal Corp., 55 West 42nd St., New York 18, N. Y. 1-M-t.f.

FOR SALE—Orange-Ade Base made from fresh oranges. Nothing to add but water, $1.35 per No. 10 tin. Bradway Chocolate Company, New Castle, Indiana. 1-M-t.f.

FOR SALE — Chocolate Powder and Chocolate Syrup for making Non-Settling Chocolate Milk. Your trial order will receive our prompt attention. Bradway Chocolate Company, New Castle, Indiana. 1-M-t.f.

FOR SALE — Truck lettering and trade mark decals, made for your truck and store advertising. Easy to apply; uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Co., 827 So. Harvey, Oak Park, Illinois. 1-M-2

POSITION WANTED

POSITION WANTED by married man, age 46. Had 29 years experience, desires position as manager or superintendent for ice cream and dairy. Train all personnel. Experienced in retail and wholesale refrigeration, Vogt or C. P. freezers, novelties and fancy ice cream. Know how to operate short time, cottage cheese, buttermilk, sour cream, maintenance of all types of dairy and ice cream equipment. Can come on short notice. I do not smoke or drink. Write Box 268, care this publication. 1-M

YOUNG MAN with a thorough knowledge of plant operation desires position in milk plant. Have had 5 years experience, am free to travel anywhere in United States. Write Box 267, care this publication. 1-M

Experienced — Plant, sales, route in a supervisory capacity, fluid milk and cream. Age 32, married, B.S. degree; capable. Interested in New York metropolitan area. Write Box 255, care this publication. 1-M

As creamery foreman or utility man, understand cleaning up equipment and bacteria control. Also manufacturing of all by products. This job must be steady, no lay off. Write A. C. Libby, 1579 E. Lafayette Ave., Bronx 59, N. Y. 1-M

MILK ACCOUNTANT - CONTROLLER —12½ years accounting experience in dairy industry; butterfat and financial accounting; thorough knowledge of milk marketing, government regulations. Salary $200 per week. Reply Box 262, care this publication. 1-M-2

POSITION WANTED — As sales representative of manufacturer of dairy equipment or supplies. Have twenty years of successful experience in selling both jobbers and dairy processing plants. Changing conditions make another line desirable. Can give excellent coverage in Washington, Oregon, California, Idaho and Utah. Commission or drawing account basis. Highest references. Write Box 264, care this publication. 1-M

POSITION WANTED — As plant superintendent. Thirty years old, married, B.S. degree in dairy industry, 10 years of training, study and hard work in establishing sound basis for permanent and worthwhile position in dairy field. Successful record as Laboratory foreman, fieldman, manager of milk bottling plant and sales manager. Write Box 254, care this publication. 1-M

HELP WANTED

WANTED AT ONCE — Senior experienced salesman by leading chemical sanitation firm operating on national scale. Must be dairy school graduate or equivalent, with practical plant or field experience. Established territories. Salary, commission, bonus and traveling expenses. Give full details in first letter. Write Box 261, care this publication. 1-M

REPAIR SERVICE

THERMOMETERS—We repair Mercurial Indicating Thermometers, dial thermometers and recording thermometers of all makes. Instruments are reconditioned like new. Satisfaction guaranteed. For economical savings ship your thermometers to Nurnberg Thermometer Co., 124 Livingston St., Brooklyn, New York. 1-M-t.f.

THAT OLE DEBBIL PRICE

Continued price problems loom for dairymen next year, warns John W. Carncross, farm economist at the College of Agriculture, Rutgers University.

This may not come as a surprise to dairymen, whose net returns dropped sharply this year when the price of milk went down and most production costs stayed high. In fact, the labor earnings of New Jersey milk producers are estimated to be about 30 per cent less, on the average, this year than they were in 1948. The price they received for milk from May to October averaged 15 per cent less than in the same months of 1948.

Dairy farmers in Europe have been getting back into production, and this, together with the dollar shortage, will drastically curtail this country's exports of dairy products.

and: STRENGTH!

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AVOID BREAKAGE,
Use the STRONG carton.

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Index of Advertisers

PAGE

A

Associated Bag & Apron Co. 51

B

Buflovak Division of Blaw-Knox Co. 20
Burckhalter, Inc., C. W. 65

C

Cherry-Burrell Corp. 11, 15, 27, 49
Compo-Cooler Company 67
Cumberland Case Company 9
Creamery Package Mfg. Co. ..... Back Cover

D

Damrow Bros. Co. 13
De Laval Separator Co., The ..... Inside Front Cover

F

Forbes Company, The Benjamin P. 53

G

Gair Company, Inc., Robert 69
Girton Mfg. Co. 7
Grant Paper Box Co. 67
Gundlach & Co., G. P. 35

K

Kendall-Lamar Corporation 47
Klenzade Products, Inc. 36
Kurly-Kate Corp. 61
Knox Glass Associates, Inc. 23
Kusel Dairy Equipment Co. ..... Inside Back Cover

L

Langsenkamp-Wheeler Brass Works, Inc. 37

M

Merit Manufacturing Co. 53

O

Overton Machine Co. 65

P

Pure-Pak Council 2-3

R

Reynolds Metals Company 18-19
Rogers Co., C. E. 51

S

Schlueter Company, The 57
Sharples Corporation, The 17
Specialty Brass Company 33
Stainless & Steel Products Co. 39
Stoelting Bros. Co. 43

T

Thatcher Mfg. Co. 29

V

Viking Pump Company 55

W

Waukesha Foundry Co. 41

IT WAS CALLED CHOCOLATL

(Continued from Page 70)

tion of sugar on the part of children which is a leading factor in contributing to dental decay on the part of 85 to 90% of our school children.

5. Doctors and nutritionists also tell us that research indicates that the free consumption of chocolate on the part of children is a contributing factor leading to acne, food allergies, and chronic colds.

6. Dairies persist and continue to mislabel their chocolate flavored milk products. This works both ways; namely, in many instances, dairies label the product "Chocolate Drink" and still insist to schools that it contains 3.5% butter-fat or more. In a few other cases, we find them labelling it as "Chocolate Milk" which according to the state law should contain 3.5% butter-fat but actually contains less.

7. It has been used by dairies as a means of flavoring old milk which could not otherwise be sold as a fresh product. So from a practical standpoint as well as from that of nutrition, you can no doubt appreciate why we believe that plain white milk is preferable in our School Lunch Programs. On the other hand if it contains 3.5% butter-fat it has been our policy to approve it for reimbursement."

I have quoted the above letter as I believe it expresses about all the objections that are raised against serving chocolate milk drinks in schools.

I recently visited the University of Wisconsin, and there learned of experiments which have been conducted by Anderson, Smith, Elvehjem and Phillips of the Department of Biochemistry, College of Agriculture. I quote from their report published in The Journal of Nutrition vol. 35, No. 3, March, 1948.

"In the course of investigations on dental caries in the cotton rat, Schweigert and co-workers found that this animal was free of carious lesions when fed a diet of liquid whole milk. This was in contrast to the extensive dental decay developed on dry rations high in sucrose or other fermentable carbohydrates. Milk was found to exert a protective action even in the presence of 5 or 10% of fermentable sugar, although caries scores on such rations were not zero as they were on a diet of liquid milk alone. The higher caries scores when a dry ration was fed seemed to indicate that *fluidity of the ration might play an important part in this protection.* Studies on various dry and liquid rations were therefore undertaken."

After detailing the experiments conducted, the author goes on to say:

"It appears from these data that fluidity of the ration is a very important factor in dental decay in the cotton rat."

And now one more quote, and this one from The Journal of Dairy Science, November, 1949.

"Chocolate dairy drink increases the total consumption of fluid dairy products and, therefore, the total intake of Vit. A is greater. Chocolate dairy drink cannot be said, because of its 4 to 5% sugar content, to be a factor in dental caries. Cocoa taken in the form of dairy drink is not harmful and is recognized as a highly nutritious food."

Chocolate is food – *good* chocolate is *good* food. Good chocolate added to good milk is a delicious nutritious beverage.

Chocolate must never be used to camouflage a defect in milk. Nothing will ruin your chocolate milk business quicker.

"Chocolate Milk" and "Chocolate Drink" should always be correctly labelled.

Chocolate has its place in the dairy and I believe has come to stay, providing everyone plays fair.